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The Conflict Forecasting Project

Final Report

by

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An expected utility approach to the study of international and comparative politics offers both the opportunity to deduce propositions about potentially conflictual policy formation, and, ~~through the application of admittedly crude indicators,~~ to evaluate the usefulness of those propositions as explanations of actual behavior. (Altfeld and Bueno de Mesquita, 1979; Wittman, 1979; Bueno de Mesquita, 1981; 1983; 1984a; Petersen, 1983; Berkowitz, 1983; Morrow, 1982; Newman, 1982). Many studies that have applied such a framework to international conflict have used the model proposed in The War Trap. Although ~~that~~ this model has proven helpful in explaining both intuitively obvious cases of international disputes and seemingly counterintuitive ones, still it possesses several serious shortcomings. The main goal of the Conflict Forecasting Project (hereafter CFP) ~~was, therefore,~~ to correct some of those shortcomings. Here I ~~propose~~ a refined version of the expected utility formulation set out in The War Trap, based on the research done for that project. In doing so, I do not wish to suggest that the revised model corrects all of the weaknesses in the earlier approach. Quite the contrary. Much still remains to be done, and work is going forward on improving the models further. However, it seems appropriate in this final report from the CFP to introduce the modifications developed by the Conflict Forecasting Project and some empirical analyses associated with them.

As was pointed out in The War Trap, the weakest theoretical

component of the expected utility approach as I constructed it was the establishment of four ad hoc decision rules used to specify necessary conditions for the initiation of conflict by risk takers or risk avoiders. Although these rules are generally consistent with the "flavor" of the concepts they are intended to "capture", they represent a serious departure from standard treatments of risk.

One objective of my project has been to reconstruct the model so that it reflects risk through the introduction of concavity or convexity into the utility functions. In doing so, it is imperative that the model give each actor the opportunity to have a differently shaped utility function, with the extremity of the function's curvature embodying the extremity of the decision maker's willingness (or reluctance) to take chances. Indeed, development of such a measure of risk-taking propensities was one of the most important tasks of the project.

A second objective, closely associated with the first, was to build greater protection against interpersonal comparisons of utility into the model (Zagare, 1982). Propositions concerned with the escalation of conflict are best evaluated when we can estimate separately the perceptions of the key leaders in i and j. The revised model allows us to do exactly that. We can now estimate how each actor's situation looks as seen through another actor's eyes. Through this development it is possible to calculate the effects of differing perceptions on conflict decision making. Furthermore, it is possible to investigate

an actor's decisions not only in isolation, but also in the context of his/her thinking about what s/he can do, and what her/his opponent can do in response (Maoz, 1983). In this way, the revised theory allows us to examine interactive decisions as well as independently made choices.

An additional objective was to introduce terms into the model that permit the estimation of the likelihood that an opponent will resist demands for policy changes. Here it is important for the model to be sensitized to the "importance" of issues to the welfare of the relevant decision makers. Thus, the modifications that take this concept into account distinguish between the outcome an actor desires on an issue and the degree to which the actor is willing to spend scarce resources to achieve the objective.

The alterations alluded to above have the additional characteristic that they greatly reduce the empirical tendency of the earlier model to produce zero-sum results in which i expects to gain exactly what j anticipates losing (Maoz, 1983). Although the theory as originally specified is not inherently zero-sum, still about seventy percent of the conflicts I studied yielded expected utility values that sum to zero. With the revised

model, fewer than ten percent of the cases sum to zero.[1]

A further objective of the Conflict Forecasting Project was to develop real-time tests of the ability of expected utility models to forecast policy choices around the globe. This task is especially important as it provides insights beyond retrospective analysis regarding the power of the expected utility approach.

Conceptualizing Risk-Taking in the Utility Functions

The central modification of the theory that was explored by the Conflict Forecasting Project was the introduction of an endogenously derived, continuous measure of risk-taking propensities. This measure permits the development of a potentially unique curvature to each actor's utility function for each choice situation in which it finds itself.

To evaluate risk-taking propensities I assume that leaders declare policy positions that represent some compromise between what they really want and what they believe is pragmatic or feasible. In particular, I assume that what one perceives is feasible is never more extreme than what one ideally wants. Then, using the original formulation in The War Trap, it is

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[1]Furthermore, all the cases that sum to zero in the revised construction involve situations where $U_{i,j}=U_{i,i}=1$, so that the respective expected utilities equal zero, meaning that the nations in question were extremely close allies. For these nations the unmeasured anticipated change in policy almost surely would have indicated deteriorating relations and, therefore, increased expected utility from waging war. Even if the probability of relations deteriorating were miniscule, under these circumstances the overall expected utility would have to be positive. Thus, their expected utilities, if fully estimated, would not have equalled zero, but would have been positive. For the logic underlying this statement see The War Trap, pp. 75-78.

possible to estimate the degree to which i's current policies leave i vulnerable to defeat, where such vulnerability is taken to be an indicator of the feasibility of the policies being pursued. In particular, I define each actor's security level as $\sum_{j \neq i} E(U_{ji})$.[2] The greater this sum, the more utility i believes its adversaries expect to derive from challenging i. As this sum gets smaller and turns negative, i increasingly is in a position to extract concessions from j and j is increasingly seen to be incapable of challenging i. In other words, as this sum decreases, i's relative security increases, so that i is assumed to have adopted "safe" policies somewhat at the expense of i's more extreme "ideal".

One can identify the hypothetical policy position that would maximize i's security level (i.e., $\sum_{j \neq i} E(U_{ji})_{min}$), and the hypothetical position that leaves i most vulnerable to defeat (i.e., $\sum_{j \neq i} E(U_{ji})_{max}$). How proximate i's actual policies are to these extremes of vulnerability, in turn, may be taken as a reflection of i's willingness to take risks. In particular, I assume that i's risk-acceptance increases as i's security

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[2]The computation of expected utilities used to define the risk component is exactly the computational procedure found in The War Trap in which utilities are, for the moment, treated as if they are strictly a function of the similarity in policy commitments of various actors. The utility functions will then have curvature introduced as a function of the proximity of each actor's actual policies to their safest and most dangerous alternatives. I am indebted to David Newman for suggesting this conceptualization of security. He has demonstrated that nations select alliance partners in a manner consistent with the notion that they are attempting to maximize their security as defined here (Newman, 1982).

score approaches its level of greatest vulnerability, and that i's risk aversion increases as its security approaches the level possessed by its "safest" policy preference. This risk-taking propensity is defined as:

$$R_i = [2\sum_{j=1}^{n} E(U_{ji}) - \sum_{j=1}^{n} E(U_{ji})_{min} - \sum_{j=1}^{n} E(U_{ji})_{max}] / [\sum_{j=1}^{n} E(U_{ji})_{min} - \sum_{j=1}^{n} E(U_{ji})_{max}]$$

This term is then transformed to:

$$ri = [1-(R_i/3)]/[1+(R_i/3)] \qquad [1]$$

so that ri ranges between 2 and .5.[3] As ri gets larger, i's aversion to risks increases.

The utility for success and the utility for failure may now be defined. Both of these utilities are assumed to be a function of the similarity of policy preferences across actors and the level of willingness to take risks within each actor. With U^i_{ii} being equal to the value i attaches to her/his own most preferred policy outcome[4], and with U^i_{ij} being equal to the value i attaches to j's policies as a function of their similarity to the policies of i, we may define the utility for success and failure respectively as:

$$U^i_{si} = 2 - 4[(2 - (U^i_{ii} - U^i_{ij}))/4]^{r^i} \qquad [2]$$

and

$$U^i_{fi} = 2 - 4[(2 - (U^i_{ij} - U^i_{ii}))/4]^{r^i} \qquad [3]$$

Similarly, we may define the utility actor i attaches to the

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[3]In the calculation of r_i it is necessary to transform R_i so as to prevent division by zero. That is why the equation calls for dividing R_i by 3. The particular divisor that is chosen will affect the rate at which the curvature of the utility function changes, but will not affect the direction of curvature.

[4]Both U_{ii} and U_{jj} are assumed to equal 1.0, with U_{ij} and U_{ji} ranging between possible values of 1.0 and -1.0.

policy changes by his/her adversary that i anticipates will occur in the absence of a challenge by i as:

$$U^{i}_{qi} = 2 - 4[(2 - [(U^{i}_{ii} - U^{i}_{ij})_{cn} - (U^{i}_{ii} - U^{i}_{ij})_{co}])/4]^{ri}$$

or equivalently, given that no change in policy is assumed,

$$U^{i}_{qi} = 2 - 4[(1/2)]^{ri} \qquad [4]^{a}$$

Of course, the U^{j}_{mi}, U_{jf} and U_{jq} terms (with appropriate superscripts are defined analogously. These terms vary as a function of whose estimate of expected utility is being calculated (i.e., who is the superscripted actor) by varying the risk exponent, so that for expected utility equations with an i superscript, calculations are done as specified above. For equations with a j superscript, j's risk-taking propensity is used to estimate what j "perceives" to be the value of success, failure, or no challenge for i in accordance with the equations delineated below.

I assume that for any superscripted actor $U_{mi} \geq U_{qi} \geq U_{fi}$ (and equivalently for j), so that winning is better than or equal to no effort to change an adversary's policies. And not changing an adversary's policies is at least as good as trying and failing. That the definitions specified above are consistent

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[a]As in The War Trap, all U_{ij} terms refer to the degree to which i and j share common policy commitments. U_{ii} terms equal the value i attaches to its own policies, a value I define as being equal to 1.0. Once the risk-taking component is combined with these variables, the appropriate utility function is defined. The reason for the transformations by 2's and 4's is to preserve the original scale of numbers while avoiding the generation of imaginary numbers. Since ri can be less than 1.0, the absence of such transformations would mean that for negative values of, for instance, U_{fi}, no real root would exist. This problem is eliminated with the introduction of these transformations.

with the structural assumptions found in standard treatments of risk-taking is clear from the hypothetical utility functions based on these definitions depicted in figure 1.

Figure 1 About Here

For the multilateral component of the expected utility equations which are developed below as extensions from The War Trap, risk is introduced into the utility functions through the following transformation[4]:

$$(U^j_{ki} - U^j_{kj})' = (U^j_{ki} - U^j_{kj})e^{R_i(U_{ki}-U_{kj})} \qquad [5]$$

This functional form assumes that risk averters "undervalue" support from friends, and "overvalue" opposition from foes, while risk accepters "overvalue" support from friends and "undervalue" opposition from foes. Figure 2 depicts the effects of the multilateral risk-taking function for risk-accepters, risk averters and risk-neutral decision-makers.

Figure 2 About Here

The Revised Model

The revised formulation is:

$$E^i(U_{ij}) = S_j[P_i(U^i_{wi}) + (1 - P_i)(U^i_{fi}) + (1-S_j)(U^i_{wi}) + \sum_{k\neq i,j} (P_{ik}+P_{jk}-1)(U^i_{ki}-U^i_{kj})'] - [Q^i_{ai}U^i_{ai}) + (1-Q^i_{ai}(Q^i_{bi})(U^i_{bi}) + (1-Q^i_{bi})(U^i_{wi}))] \qquad [6]$$

$$E^j(U_{ij}) = S_j[P_i(U^j_{wi}) + (1 - P_i)(U^j_{fi}) + (1-S_j)(U^j_{wi}) + \sum_{k\neq i,j} (P_{ik}+P_{jk}-1)(U^j_{ki}-U^j_{kj})'] - [Q^j_{ai}U^j_{ai} + (1-Q^j_{ai})(Q^j_{bi}(U^j_{bi})$$

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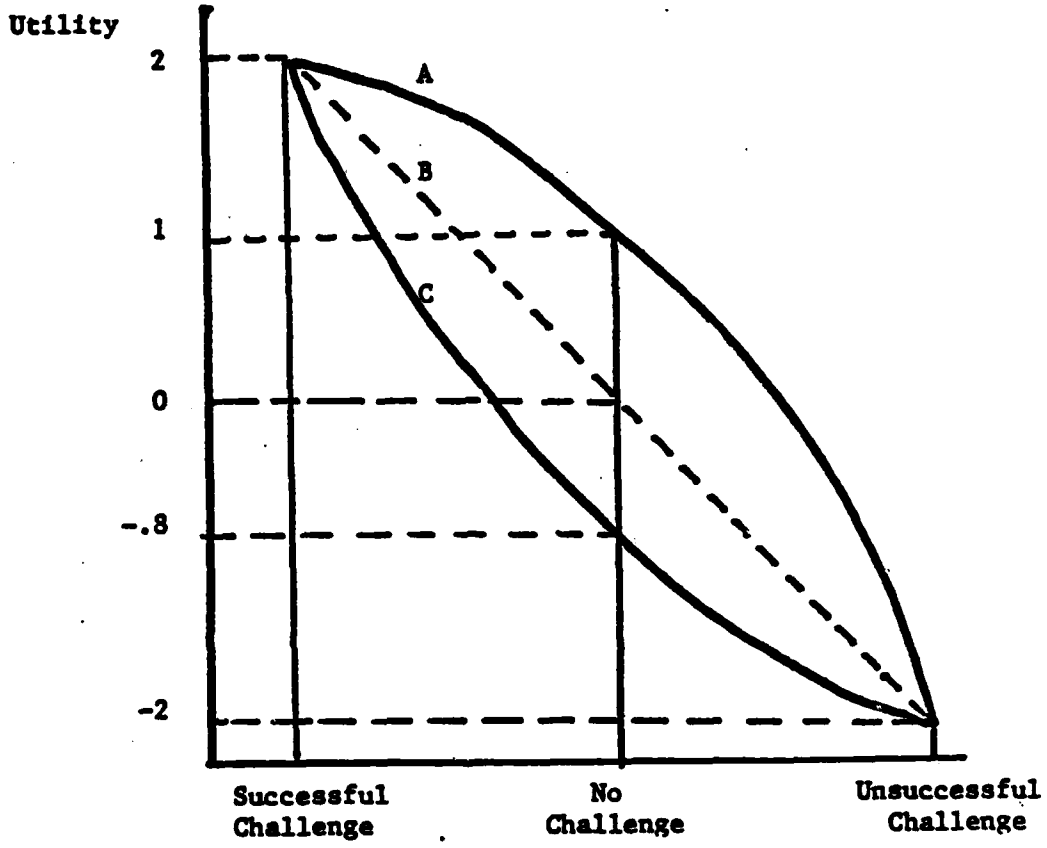
[4]In evaluating equation [5], the reader should keep in mind that all U_{ki} and U_{kj} are as defined in The War Trap, with the risk-taking component representing the innovation introduced here. That component is denoted by the use of a ' in the equation.

Figure 1

The Effects of Risk-Taking on

the Curvature of the Utility Functions



Let $U_{aj} = U_{bj} = U_{cj} = -1$. Let ra=2, rb=1, rc=.5

Let each actor's expected utility = the expected utility from challenging j minus the expected utility from not challenging j. Assume the probability of success from a challenge =.5, and assume the no challenge alternative yields the expectation of no change in policy by j for sure. Then:

$E^A(U_{Aj}) = 0 - 1 = -1$. Therefore No Challenge is preferred to the lotter

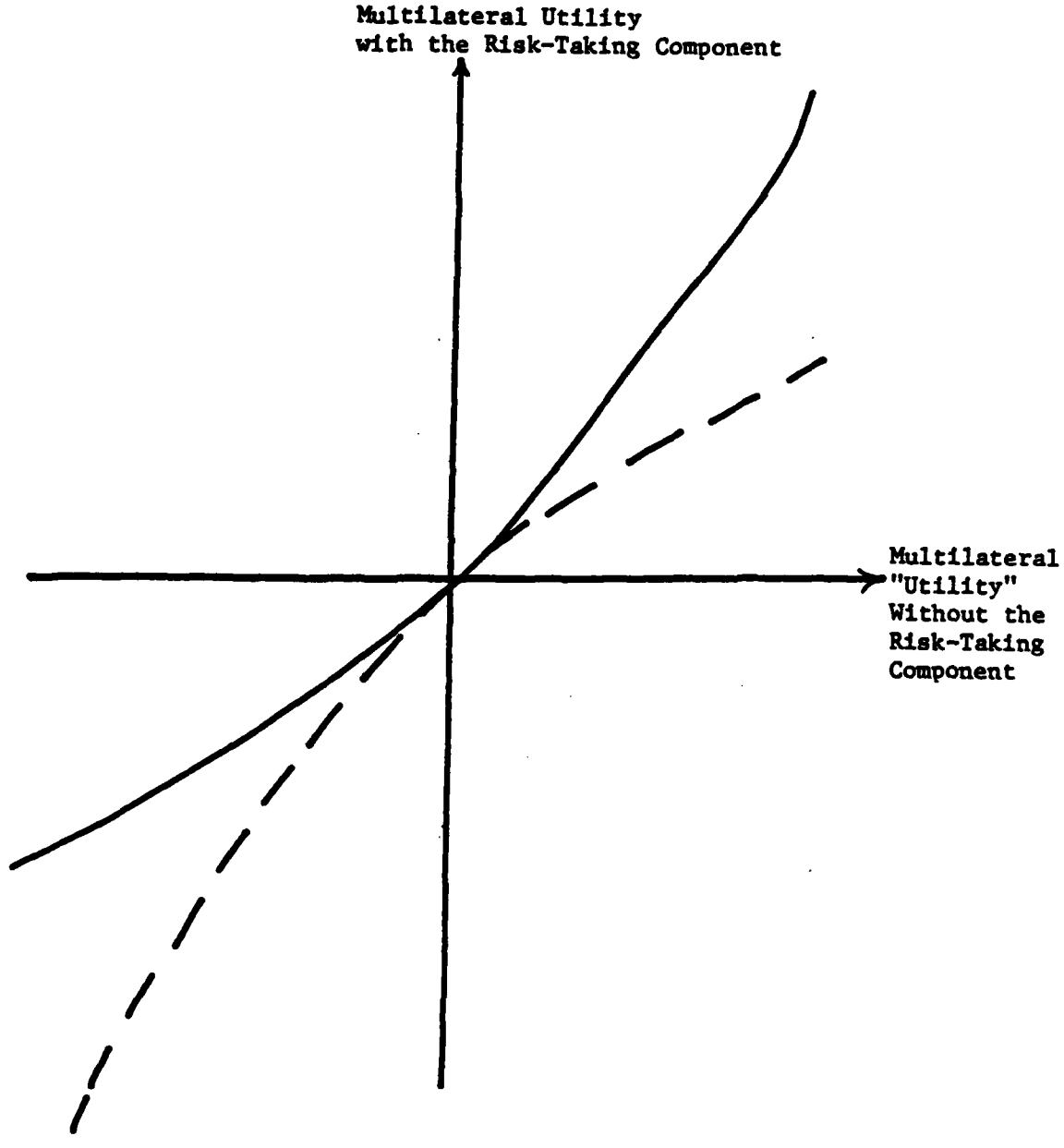
$E^B(U_{Bj}) = 0 - 0 = 0$ (Challenge) Indifferent (No Challenge)

$E^C(U_{Cj}) = 0 - (-.8) = .8$ Challenge preferred to No Challenge

Figure 2

Multilateral Utility:

The Effect of Risk-Taking on the Function



$$+ (1-Q^{j}_{bi})(U^{j}_{wi}))] \qquad [7]$$

$$E^{i}(U_{ji}) = S_i[P_j(U^{i}_{aj}) + (1 - P_j)(U^{i}_{fj}) + (1-S_i)(U^{i}_{aj}) + \sum_{k\neq i,j} (P_{ik}+P_{jk}-1)(U^{i}_{kj}-U^{i}_{ki})'] - [Q^{i}_{aj}U^{i}_{jq} + (1-Q^{i}_{aj})(Q^{i}_{bj}(U^{i}_{bj}) + (1-Q^{i}_{bj})(U^{i}_{wj}))] \qquad [8]$$

$$E^{j}(U_{ji}) = S_i[P_j(U^{j}_{aj}) + (1 - P_j)(U^{j}_{fj})] + (1-S_i)(U^{j}_{aj}) + \sum_{k\neq i,j} (P_{ik}+P_{jk}-1)(U^{j}_{kj}-U^{j}_{ki})'] - [Q^{j}_{aj}U^{j}_{aj} + (1-Q^{j}_{aj})(Q^{j}_{bj}(U^{j}_{bj}) + (1-Q^{j}_{bj})(U^{j}_{wj}))] \qquad [9]$$

where

$E^{i}(U_{ij})$ = i's perception of the difference in i's expected utility from challenging j's policies and from leaving j unchallenged. That is, this term represents i's expectation of its net benefit (or loss) from challenging j.

$E^{i}(U_{ji})$ = i's perception of the difference in j's expected utility from challenging i's policies and from leaving i unchallenged.

$E^{j}(U_{ij})$ and $E^{j}(U_{ji})$ have analogous interpretations, but from j's perspective.

S_i = i's probability of not complying with j's demand for a policy change by i.

S_j = j's probability of not complying with i's demand for a policy change by j.

P_i = i's probability of succeeding in a bilateral contest with j. P_j is j's probability of defeating i in a bilateral contest.

$(P_{ik}+P_{jk}-1)$ = the marginal effect of third party k on the probability of i or j succeeding. This, and the associated utility terms, represent the algebraically reduced form of two lotteries,

one in which k is assumed to join i, and one in which k is assumed to join j. Since, on balance, these are mutually exclusive alternatives (as are, for instance, i's decision to select the strategies of challenging or not challenging j), the net impact of these two lotteries represents k's marginal effect.[7]

U^i_{ki} = the value i believes is gained from support from k.

U^i_{kj} = the value i believes j gains from k's support.

$U^i_{ki} - U^i_{kj}$ = the net value i believes will be contributed by k to the contest between i and j.

Analogous terms with j as the superscripted actor refer to j's perception of k's value to i and j respectively.

The "$U_{\blacksquare}$" terms refer to the utility of success for the subscripted actor as perceived by the superscripted actor in the event the subscripted actor challenges the relevant adversary in a bilateral dispute. Thus, $U^j_{\blacksquare i}$ is j's perception of i's utility for succeeding in forcing j to change its policies to be in accord with i's wishes. The "U_{ϕ}" terms are analogous to the "$U_{\blacksquare}$" terms, except that "U_{ϕ}" refers to the utility the superscripted actor believes the subscripted actor attaches to being defeated following its initiation of a bilateral challenge. These utilities are a function of the similarity in policies

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[7]That $(P_{ik}+P_{jk}-1)$ is the marginal contribution of k to the probabili of success by i or j is easily shown. $P_i + (1-P_i) = 1$. Let P_j (the probability that j succeeds in the bilateral contest) $= (1-P_i)$. $P_i \leq P_{ik}$ since P_{ik} = the probability i succeeds given support from k. Similarly $P_j \leq P_{jk}$. Thus, since $P_i+P_j = 1$, $[P_{ik} + P_{jk} - (P_i + P_j)]$ must be the contribution of k.

manifested by i and j, and of the risk taking propensity of the superscripted actor.

The "Q_q" terms are the probability of the subscripted actor maintaining its current policies in the absence of a challenge by the other actor, with the estimate of that probability being made by the superscripted actor. For simplicity sake, I will assume throughout the rest of this study that the "Q_q" terms equal 1.0, so that the "no challenge" lottery reduces to the assumption that in the absence of a challenge, one's adversary is anticipated to maintain its existing policies.

The "U_b" and "U_w" terms refer to the utility the superscripted actor perceives the subscripted actor attaches to some anticipated improvement or worsening of existing policy in the absence of a demand for policy change, while the "U_q" terms refer to the utility the superscripted actor perceives the subscripted actor attaches to no change in policy by its potential adversary. Despite the restrictive assumption that the relevant decision maker anticipates no change in its opponent's policies, the new risk taking procedure that is introduced into the calculation of utilities preserves the existence of a distinct gambling threshold for each actor in each situation in which it finds itself. The expected utility associated with the "no challenge" option represents the relevant decision-maker's "gambling threshold. Thus, the expected utility from the "challenge" option must exceed the expected utility from the "no challenge" option in order for a rational decision maker to choose to initiate a

dispute.

Equations [6] through [9] are equivalent to the original models in The War Trap except that (a) the utility functions are altered to allow concavity or convexity; (b) the "no challenge" side of the equation is modified so that a situation-specific "gambling threshold" is now theoretically defined for each actor; and (c) analyses of the effects of "perceptual" differences, as reflected in the risk-taking component of the utility function, are now possible.

Data Making Procedures

An important task of the Conflict Forecasting Project involved the development and testing of new procedures for measuring the variables that drive the expected utility equations depicted above. In previous research, I had used broad measures of similarities in foreign policy commitments. Such an approach lacked issue specificity and so inhibited applications of the models to problems short of war and, especially to problems involving real-time forecasting. Let me, at this juncture, introduce the methods that were developed during the course of the CFP for measuring utilities and probabilities.

For most issues it is possible to define a continuum with clearly specified end points such that the continuum encompasses all of the feasible resolutions of the issue in question. We may assume that all feasible outcomes lie between the most extreme proposals or positions taken by groups within the society in which the policy issue is to be resolved. Then, each group

can be placed on the continuum at the outcome position that represents its most preferred resolution of the issue. These positions represent group "ideal points". For each group, we may rank each other group from most proximate to least proximate to the first group's ideal point. By correlating these orderings of preferences, we have constructed the first building block of the utility functions. For each actor i, the correlation between i's ordering of possible outcomes and j's ordering of possible outcomes is taken to be the value of $U_{i,j}$. The utility functions, then, are created by transforming each $U_{i,j}$ score as indicated earlier so as to yield "U_a" and U_d" terms that encompass the appropriate actor's risk-taking function. Figure 3 depicts an example of such an issue continuum, along with the values of the respective "$U_{i,j}$" scores.

In a similar manner, the likelihood that an opponent will refuse to give in to some demand,is a function of how important the issue is to that actor. Drawing a continuum with a scale that varies from zero to one hundred, we can have experts locate each group on the continuum at the position that represents the importance or salience of the issue for the group. A score of 100 indicates that the group in question is prepared to expend all of its influence on the issue. Similarly, a score of 50 suggests a .5 probability of the group resisting a demand to give in on the issue. Each value between 0 and 100 is transformed to a number between 0 and 1.00, with that number being treated as the probability of resistance (S_j). Figure 3 shows an example

of such a "salience" continuum.

Figure 3 About Here

The probability that one group can defeat another in a bilateral contest is evaluated as the proportion of available power that one group can bring to bear against the other. Thus, defining group i's power as Cap_i and j's power as Cap_j,

$P_i = Cap_i/(Cap_i+Cap_j)$

$P_{ik} = (Cap_i+Cap_k)/(Cap_i+Cap_j+Cap_k)$

$P_{jk} = (Cap_j+Cap_k)/(Cap_i+Cap_j+Cap_k)$

Data Making Problems

During the course of the CFP, several efforts were made to develop "hard" data sources for estimating group preferences, capabilities and saliences -- all the data required by the model. Unfortunately, such sources of information proved elusive despite efforts to assist in this area by my technical representative. Consequently, all of the real-time analyses done under the auspices of the CFP involved the use of experts who provided the relevant data inputs. I should emphasize, however, that the experts were not asked to make judgments regarding the resolution of the issues I examined, but rather were asked only to provide data inputs. In many instances, experts revealed strong disagreement with the forecasts that arose from the solution of the expected utility models. However, the models proved very successful at providing detailed, precise, accurate forecasts.

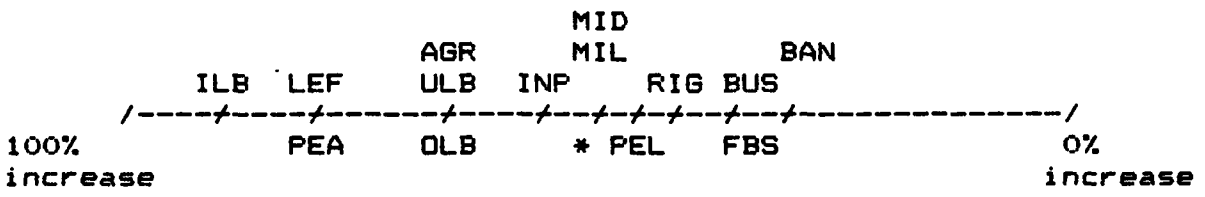
The risk measure as described earlier requires fairly restrictive assumptions about behavior. In particular, it assumes

Figure 3

Issue Continuum Format for Gathering Data

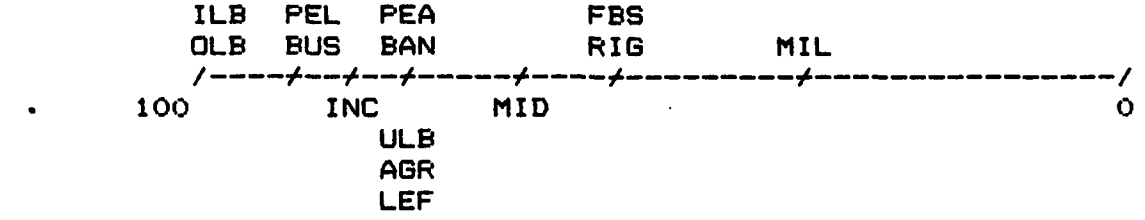
Issue: What level of nominal increase in wages (total of both supplemental and January) is most supported by each group?

Group Preferences



* Forecast: 45% increase

Salience of the Issue:



that "true" ideal points are rarely located near safe positions. Again, efforts to use hard data sources to develop alternative measures that did not require so restrictive an assumption proved impossible despite joint efforts with my technical representative. As with the other variables in the model, the risk measure as constituted has proven quite successful in the real-time forecasts at isolating the behaviors engaged in by the decision makers who were analyzed.

The utility measures assume single peakedness, monotonicity, unidimensionality and separability of issues. These assumptions preclude the development of cycles or intransitivities in the aggregation and summation of preferences. These are the most seriously restrictive of the assumptions applied to my model. Surprisingly, despite these assumptions, the models proved (and continue to prove) highly reliable as forecasting tools.

Hypotheses

The formulation stipulated above carries several important behavioral implications. First, since I am still modeling only necessary, and not necessary and sufficient, conditions, we can reiterate that decision maker i can, but need not, choose conflict as a strategy for acquiring policy gains (or reducing anticipated losses) only if equation [6] is not less than zero. This necessary condition is consistent with both the view that the decision maker in question is an expected utility maximizer or an expected utility satisficer. Only the specification of the calculus

associated with all alternative strategies can allow us to distinguish between these two decision rules. Still, we can say that:

H_1: Equation [6] must be greater than or equal to zero in order for i to initiate a conflict with j.

We can, by comparing equations [6] and [8], calculate i's perception of the stream of events likely to follow i's decision to initiate a dispute. Similarly, we can estimate j's expectations regarding the unfolding of a dispute by comparing equations [7] and [9]. To do so, we need merely assume that i and j each assumes that the other is a rational, expected utility maximizer or satisficer.

In order to specify the events that are likely to lead to the escalation of a dispute, we must first identify the condition that define a dispute. A dispute or conflict occurs when i makes a demand of j which is accompanied by the threat to inflict punishment on j if the demand is not fulfilled. The demand may have many characteristics, of course. i may ask j to stop doing something that j was doing, for instance, or i may ask j to begin doing something that j previously did not do. The critical element is that the demand must be accompanied by a threat.

How can j respond to such a demand? j can capitulate to the demand, or j can attempt to negotiate with i in the hope of modifying i's demand, or j can resist i's demand, with force if necessary. Sometimes, when j attempts to negotiate and is unsuccessful, j will conclude that resistance (and even fighting)

is warranted. Indeed, we should expect that conflicts that escalate to include violence almost always pass through the negotiation stage, no matter how briefly. But, when j capitulates to i, we should not expect further escalation except under situations where i's perceptions are changed by the ease with which j gives in. Such situations, which may be characterized as describing the circumstance known as appeasement, should be relatively rare. By and large, then, one may perceive that j is expected to give in to i's demands without resorting to negotiation or resistance if one believes that j perceives capitulation to those demands to be cheaper than resisting them.

We may represent all disputes as falling into one of four circumstances as perceived by one participant, so that sixteen combinations of circumstances embody the complete perceptual mix possible among initiators and their foes. Figure 4 displays the four circumstances, and provides the algebraic relationship each represents.

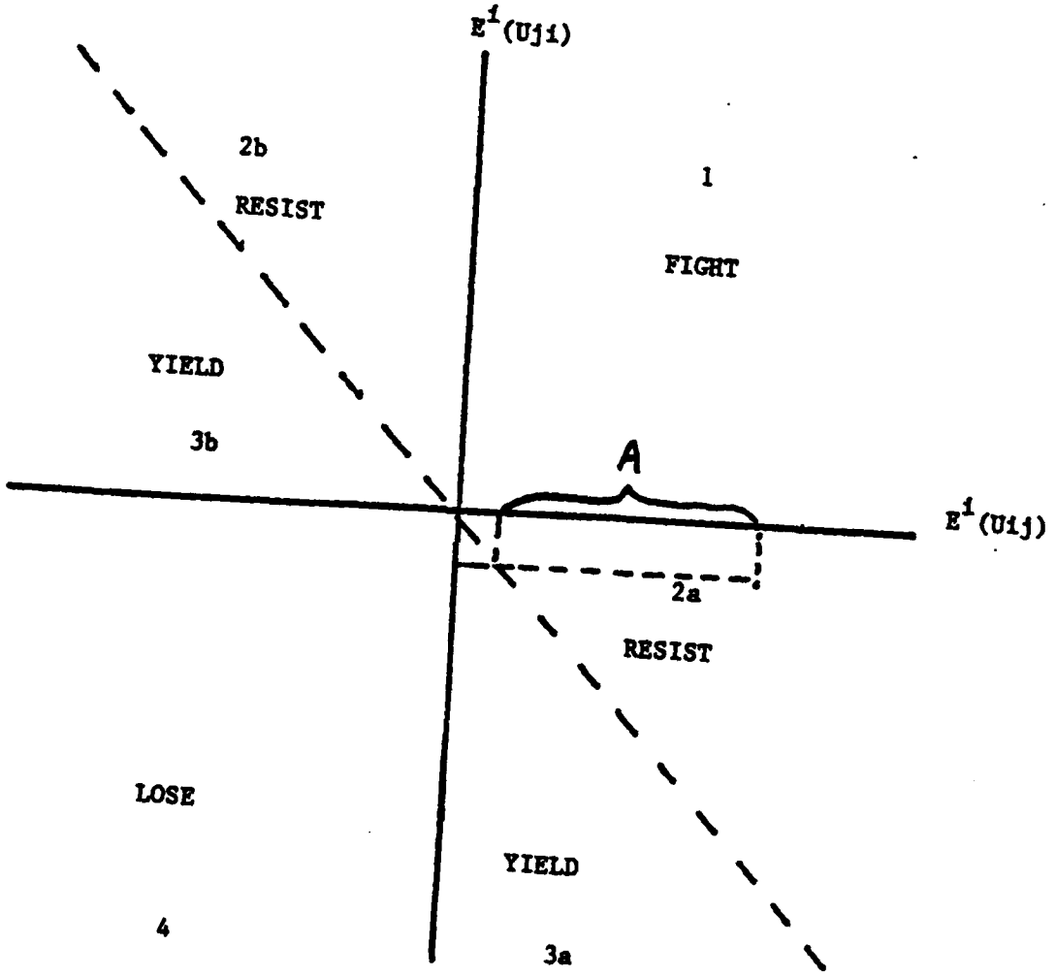
Figure 4 About Here

Escalation Under Shared Perceptions

Let us begin the discussion of figure 4 by focusing first on the circumstances in which conflicts fall into the same portion of the Cartesian coordinates whether the dispute is viewed from i's perspective or j's. Suppose both sides perceive the dispute falls in the first quadrant. In that case, and addressing it from i's point of view just for ease of presentation, we may say that i believes i can extract a net benefit from challenging

Figure 4

Expected Utility: The Effects of Perception on the Escalation of Conflicts



Fight : $E^i(U_{ij}) \geq 0$ and $E^i(U_{ji}) \geq 0$

$Resist_a$: $E^i(U_{ij}) \geq 0$ and $E^i(U_{ji}) < 0$ and $|E^i(U_{ji})| \leq E^i(U_{ij})$

$Yield_a$: $E^i(U_{ij}) \geq 0$ and $E^i(U_{ji}) < 0$ and $|E^i(U_{ji})| > E^i(U_{ij})$

Lose : $E^i(U_{ij}) < 0$ and $E^i(U_{ji}) < 0$

j. At the same time i believes that j expects to extract a net benefit from i. From i's point of view this means that i does not expect j simply to give in to i's demands. Nor does i anticipate that a negotiated compromise is likely to be worked out. After all, how can adversaries compromise when both expect to be the recipient of net benefits? Since j shares the same perspective when j believes both sides expect to win, we may infer that destabilizing conflict is highly likely under this "Fight" circumstance. In the context of international disputes, we should expect this situation to lead to war. I state this as the following hypothesis:

H_2: If i and j each believes their dispute falls in quadrant 1 of figure 4, then the probability that their serious dispute will escalate to war will approach 1.0.

If the ensuing conflict is perceived by both parties to fall in the upper half of quadrant 2, in which one side is expected to win, and the other side is expected to lose, but the loser is anticipated to lose less than the winner is demanding, then neither party should expect simple capitulation to the demands being made. Instead, the side that is expected to lose should try to negotiate a compromise settlement. The negotiations will be over the difference in expectations reflected by the line segment AB in Figure 4. Some of the time these negotiations will succeed. Other times, however, we should expect that either i or j is unwilling to make a large enough concession, leading to further escalation (and, in the international context, to

war). In general, that will happen when the anticipated costs of fighting and losing are smaller than the cost of the loss being demanded at the outset. We may state the general association as the next two hypotheses:

H_3: If both parties to a serious dispute agree on who the winner is anticipated to be, but disagree over how much the loser must give up to the winner, such that the loser believes less has to be sacrificed than the putative winner is demanding (i.e., the dispute falls in sector 2 of figure 4), then some of the time a negotiated settlement will be reached, so that the conflict does not become as violent as a war, and other times the conflict will escalate to warfare. The probability of war under this "Resist" circumstance will be lower than under the "Fight" circumstance depicted in quadrant 1 of figure 4.

When both initial disputants perceive the expected utilities surrounding their conflict fall into sector 3, in which the potential victor is perceived to be capable of extracting a larger gain than that actor is perceived to be demanding, the expected loser is better off yielding to those demands than trying to negotiate or fight for a better settlement. This is so because the "loser" anticipates that its adversary actually can gain more than is currently being sought. Any resistance to the opponent's modest demands could lead to an escalation in expectations. Certainly, if the side making demands believes those demands are modest relative to what it is capable of extracting, it will have no incentive to accept even fewer gains in

response to efforts at negotiations by the putative loser. Such conflicts should have a quite low probability of escalating, with the only likely exceptions being so-called "appeasement" circumstances in which the "loser" yields so readily that it stimulates the belief that additional benefits can be had cheaply enough to be worth pursuing.

H_4: If i and j agree on who the expected winner of their dispute is, and if each side perceives the conflict falls in sector 3, called the "Yield" condition, then the probability of their dispute escalating to create instability (or, in the international context, warfare or violence) should be lower than the conmparable probabilities under the "Resist" condition described in the previous hypothesis.

Continuing with the circumstances in which i and j share a common perception about the nature of their dispute, we turn to situations in which the conflict falls in quadrant 3 of figure 4. In this "Lose" circumstance, each side perceives that it cannot defeat the other side. Demands made under these circumstances are likely to be bluffs, posturing, or "trial balloons". With luck, one's adversary may give in to the "bluffed" demands. Alternatively, one's adversary may "bluff" back, by assuming a tough, perhaps even threatening posture. Since neither side expects a net gain from concrete action, however, the conflict should not escalate beyond verbal threats. In the international context, disputes in this sector should never escalate to include warfare.

H_5: When both parties to a dispute perceive that they are facing a losing situation, the dispute should be resolved peacefully. The probability of escalation to war in such circumstances should approach zero, while the probability of a nonviolent resolution of the dispute should approach 1.0.

Escalation When Perceptions Differ

Let us now turn our attention to disputes in which i's perception of the relationship between i's expectations and j's expectations is different from j's perception of that same relationship. Of course, i's and j's perceptions may differ in two fundamental ways. i may anticipate that j's incentive to negotiate or resist i's demands are less than or greater than j's perception of those same incentives. For instance, i may perceive that the i-j dispute falls into the "Fight" quadrant (quadrant 1), while j perceives the dispute as falling within the "Yield to i" sector (4a). The difference in such perceptions may have profound implications for the likelihood of a conflict escalating to include violence or warfare.

When i makes a demand of j, i has some expectation about j's response. If i believes j perceives its expected utility falls in quadrant 1, i expects a violent struggle. If i believes j's expected utility falls into sector 4a which indicates that i is expected to defeat j, then i expects j to capitulate to its demands without negotiation or confrontation. But, j, of course, acts on j's perception of the situation. Thus, if j perceives that the situation falls in sector 3, and that j

is going to lose, then regardless of the fact that i might perceive j as falling in sector 2's "Resist" condition, j will give in to i. Conversely, if, for instance, i thinks j falls into the "Yield" condition, while j perceives that its dispute with i falls into the "Resist" circumstance, i will be surprised to discover that j, rather than giving in, will try to negotiate. Such a circumstance, in turn, is much more likely to lead to violence than if the circumstances were reversed as in the first example. After all, i thinks it is making a modest demand of j -- a demand for a settlement that is smaller than i thought j believed i could impose. If j tries to negotiate under those circumstances (because j does not share i's perception of the situation), i is likely to react with hostility toward j's "unreasonable" reluctance to give i its modest request. We may state the circumstances covered by these, and other, situations that involve differences in perceptions as the following hypothesis:

H_6: If i perceives that its conflict with j should not become violent because j is expected to give in to i, then if j does not give in there is a higher probability of violence than if i perceives that j will resist or fight i when j perceives that it should give in to i's demands. That is, when j's perception of a dispute with i falls into a lower-numbered sector of figure 4 than i's perception of the same dispute, the probability of violence is higher than when j's perception falls into a higher-numbered sector of figure 4 than does i's perception.

H_7: As the dispute moves from the upper right quadrant of figure

4 toward the lower left quadrant, the number of fatalities associate with the attendant conflicts should steadily diminish, approaching zero in quadrant 3.

Hypotheses two through seven are summarized by the relations depicted in table 1. None of these "escalation" hypotheses seem particularly surprising or counterintuitive. Indeed, having laid out the logic of expected utility decision-making, these hypotheses seem almost obvious. Yet, when we turn to their empirical investigation we should not lose sight of the fact that they are not ad hoc hunches, but a direct consequence of a systematic, comprehensive theory. We should bear in mind that they are obvious because of the expected utility framework. Without that framework we could not state these relationships. Indeed, to the best of my knowledge, they appear no where else in the literature on crisis management or conflict forecasting and resolution. Yet many of these hypotheses are fundamental statements about the significance of perceptual differences which play so important a role in much of the conflict literature. Indeed, several of these represent genuinely testable hypotheses about the relationship between conflict and perceptions.

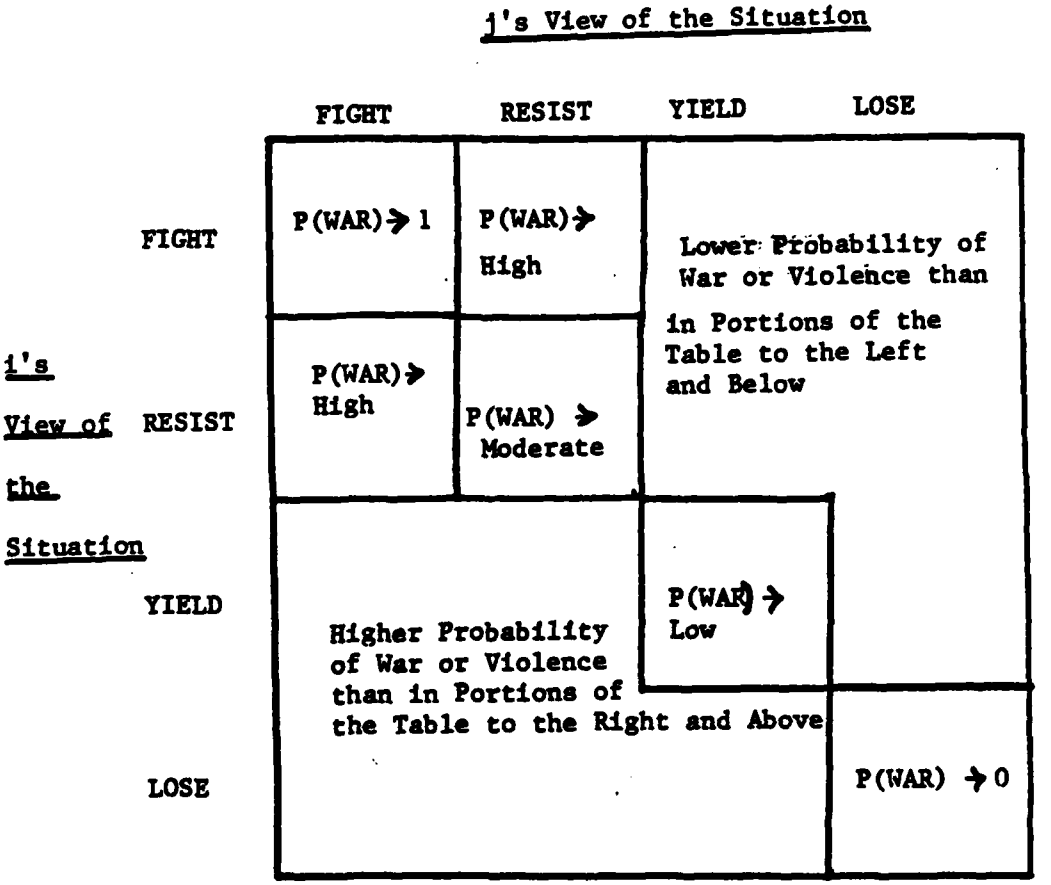
Table 1 About Here

Research Design

To test the revised model developed in the Conflict Forecasting Project two separate approaches were used. The model was subject to intensive scrutiny in postdictive analyses of the data base used in The War Trap, and was applied to a large number of real-time

Table 1

Graphic Depiction of Hypotheses 2-7



forecasting experiments. Both of these empirical investigations are summarized here. I begin with the postdictive replication of earlier examinations of expected utility and international conflict and then turn to the real-time forecasts that were done with the assistance of my technical representative.

To test the revised model retrospectively, I focus on 133 European disputes that took place between 1816 and 1965. These disputes include the 51 threats, 48 interventions, and 34 wars identified in Appendix A. Equations [6] through [9] were solved for all the European dyads from 1816-1965, the period for which I have complete data.* For these analyses, the Correlates of War Project's annual composite capabilities data from 1816-1965 were used. For the handful of conflicts within my data set for which annual data were incomplete I used the closest data point to the conflict. In practice, this meant that the scores for one dyad in 1914 are based on 1913 data, two 1918 dyads are based on 1919 data, and three 1940 dyads are based on 1939 data. All measurement procedures are the same as those described in The War Trap with the exception of the assessment of risk taking orientations.

The risk measure is predicated on the notion that national leaders select their security policies with an eye to what they

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*I focus only on European dyads and European disputes here because of the costs of solving the revised model. Since Europe experienced more disputes for which I have data than any other geopolitical region, I begin with that part of the world. In subsequent analyses, as funding permits, I will extend the investigation to all of the geopolitical environments examined in The War Trap, and hopefully to alternative constructions as well.

desire and also with an eye to what they think they can safely "get away with." Thus, the risk terms are calculated by manipulating the alliance portfolios used as the policy indicator through simulation to locate the "best" and "worst" portfolios for any given nation, where the best and worst are defined in terms of the sum of expected utilities of all others vis-a-vis the nation in question under the assumption that utilities are strictly a function of similarities in alliance commitments.* That is, the combination of hypothetical alliance commitments for nation i (holding all other existing alliance commitments constant) that leads to the smallest possible sum of expected utilities for each j versus i is found, indicating i's most secure position. Similarly, the worst hypothetical combination of alliance commitments is identified. These sums define the terms used to measure R_i in equation [1]. i's propensity to take risks is then calculated as a function of where in the range of possible security levels i's actual alliance commitments place i. If i is exactly at the midpoint of the range, $R_i = 0$. As i moves toward a more risk aceptant posture (i.e., away from more defensible policies toward less defensible policies), R_i increases, and as i moves closer to its most secure alliance portfolio, R_i decreases.

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*That is, temporarily applying the expected utility equations (without risk or uncertainty taken into account) as developed in The War Trap, I identify the worst case and best case alliance strategy for each nation each year, using the original, linear utility functions to define the range of possible expected gains or losses for each nation. These, then, are utilized to measure risk propensities and, thereby, to introduce curvature into the utility functions.

The final risk score, calculated according to equation [1], is constrained so that ri ranges between +2 and .5. Some constraint is required, as noted earlier, to avoid division by zero. These risk scores are then introduced into the utility functions as described in equation [2] through [5].

Results

Let us begin our examination of the analysis by evaluating, albeit briefly, the results of the risk-taking calculations. It will be recalled that an important limitation of the initial measurement procedure for risk-taking as described in The War Trap was that risk scores could not be estimated for major powers, compelling me to treat all such nations as if they were risk neutral. This was unfortunate as the distribution of risk-taking propensities is a subject of considerable import for much of the research on war.

I have noted elsewhere that the theoretical relationship between systemic polarity and war (Bueno de Mesquita, 1978), or the theoretical association between power distributions and the likelihood of war (Bueno de Mesquita, 1981b), for instance, is dependent on what is assumed to be the distribution of risk-takin among key national leaders. The contending polarity hypotheses arise because of different implicit assumptions about risk-taking propensities. Deutsch and Singer (1969), who contend that bipolarit tends to produce war, while multipolarity tends to yield peace, seem inclined to believe decision makers are generally risk averse, while Waltz (1964), who supports the opposite hypothesis,

appears to assume that such leaders are typically risk acceptant. I have argued that if risk taking is normally distributed, then neither the hypothesis that bipolarity leads to war, nor the counterhypothesis that multipolarity leads to war should be generally correct (1978).[10] I have made similar arguments with respect to the contending hypotheses linking power distributions to war (1981b).

What, then, is the distribution of risk-taking propensities using the revised formulation? Risk scores were calculated for each European nation for each year of membership in the international system, for a total of 3332 annual nation risk scores. The mean R_i value for these cases is .018, with a standard deviation of .503, and a range of values from -1.00 to +1.00. The median is .182. In other words, the average score is just about exactly at the risk neutral point. The measures of kurtosis and skewness for the distribution indicate only a moderate deviation from a normal distribution, with that deviation indicating slight

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[10]In fact, one need not assume a normal distribution of risk-taking propensities to cast doubt on the polarity or power hypotheses. It only need be the case that risk orientations are widely dispersed rather than heavily skewed toward risk-acceptance or risk-aversion.

skewness toward risk-aversion.[11] The distribution for the major powers was essentially the same as for the lesser nations, with the range of obtained values being identical. Turning to the participants in the 133 pairwise serious disputes investigated here, I find that the overall mean risk score is .026, with the mean for initiators being -.033, and for targets being .085. The means for all the conflicts tend toward risk neutrality, and the distribution is essentially normal. Such a distribution casts serious doubts on many prominent hypotheses linking either polarity or power to war. But, is there reason to believe that the risk scores estimated here are related to actual behavior? To answer this question, let us examine table 2. If the indicator of risk taking is meaningful, we should expect that those who were risk acceptant had a substantially higher probability of initiating unsuccessful violent conflicts -- wars or interventions -- than did those who were risk averse. As can be seen in table 2, thirteen of forty risk acceptant initiators (or 33 percent) lost their violent conflicts, while only two of forty risk averse initiators (or 5 percent) suffered a similar fate. The mean

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[11] Interestingly, the mean risk-scores for the two centuries are significantly different from each other. The mean for the nineteenth century of .064, indicating a slight tendency toward risk-acceptant behavior stands in contrast to the twentieth century mean of -.039. The t-statistic associated with these means is 5.982. The t-statistic for the intercentury difference in risk scores for major powers is also significant (t=3.856). In this case, the analysis indicates that while major powers tended to be slightly risk-averse in the nineteenth century, their leaders became more risk-averse in the twentieth century. These changes carry important implications which will be investigated in a subsequent study. I wish to thank Michael Horn for his invaluable assistance in calculating these distributional properties.

risk score among defeated initiators of violent disputes is .286, while the mean among victorious initiators is -.139. The difference is significant at less than the .05 level. Apparently, risk acceptant initiators prove to have a much higher probability of defeat than do risk averse initiators, suggesting that they do, indeed, take greater risks.

Table 2 About Here

The analysis, based on the model as presented in The War Trap, of the 133 cases included here reveals that 107 out of 133 initiators had positive expected utility, with only thirty-one opponents similarly possessing positive expected utility.[12] Yule's Q, a measure of necessary, but not necessary and sufficient, conditions, equals .86 for this analysis. The original model, solved using annual rather than quinquennial capabilities data, reveals that 106 initiators had positive expected utility, while 39 opponents were similarly endowed. Yule's Q for this analysis is .81, or essentially the same as with the quinquennial data. Making similar comparisons using i's expected utility scores based on i's perception of its own potential (equation [6]) and j's expected utility scores based on j's perceptions of its potential (equation [9]) reveals that 103 initiators had

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[12]Because I have now shown that in conflicts expected to remain bilateral it is possible for P_i to be less than .5 and for i still to initiate a conflict under the rules of rationality, I no longer treat expected utilities of zero for the weaker side as being necessarily less than zero based on expectations regarding the utility associated with anticipated future policy positions. Instead, all zeros are now treated as positive numbers, in accordance with the expectations derived from the modified theory.

Table 2

Relationship Between Risk-Taking,

War Initiation, and

Victory or Defeat

I is:	I Won	I Lost
Risk-Acceptant	27	13
Risk-Averse	38	2

positive expected utility, 35 opponents were so endowed, and Yule's Q = .81. There is essentially no difference in goodness of fit when we compare the original model solved with quinquennial data to its solution based on the annual capabilities data, nor does the switch from the original theoretical form to the new form seem to have mattered. 107 out of 133 initiators in the original formulation had positive expected utility. 103 out of 133 are similarly endowed in the latest formulation. The difference is not statistically significant. The expected number of initiators with positive expected utility from among the 133 initiators, given the distribution of this attribute in the nearly 80,000 annual European dyads is substantially less than that which is observed. In fact, the difference is so large that the probability that 103 out of 133 initiators had this attribute by chance is less than .001, with z=6.281. These results seem to be quite encouraging. They demonstrate that the results are rather robust. They also show that the new version of the theory, which is both less ad hoc in its treatment of risk taking and is more parsimonious (having eliminated the need for four discrete decision rules), works as well as the more complicated original version when a simple hypothesis (H_1) linking the sign of expected utility to conflict initiation is examined.

Although these results provide some interesting information, they really are not able to reveal the key differences between the revised model and the original formulation. To see these,

we must turn to the hypotheses that focus on conflict escalation. Here we can explore perceptual differences between i and j more thoroughly. In the original model it was not possible to distinguish between i's expectations and j's without making interpersonal comparisons of utility. With the new formulation, no such interpersonal comparisons are required. Because equations [6] and [8] reveal i's expectations and equations [7] and [9] similarly indicate j's, we can evaluate hypotheses (2)-(7) on conflict escalation and perceptions in a manner not previously possible. Let us turn, then, to an examination of the extent to which this added dimension contributes to our understanding of conflict escalation. The results are summarized in table 3.

Table 3 About Here

Hypothesis 2 stipulated that the probability of war approaches being equal to one given that both sides perceive the situation as "Fight". Of the twelve disputes that satisfy this condition from both i's and j's perspective, eleven, or ninety-two percent, became wars. It is difficult to assess whether .92 is statistically different from 1.00 or not, although it seems pretty clear that there is not a substantive difference. Using the normal approximation to the Bernoulli distribution, and assuming that the expected proportion of wars equalled .98 reveals that the observed value of .92 is not significantly different from the expected value. It appears, then, that the probability of war under this circumstance does approach 1.00

Hypothesis three indicates that the probability of war

Table 3

The Distribution of Wars and Interventions

i's View of the Situation		FIGHT	RESIST	YIELD	LOSE
i's View of the Situation	FIGHT	11/12=.92* 11/12=.92	2/3=.67 2/3=.67		
	RESIST	No Cases of Conflict in this Cell	10/29=.34 22/29=.76	0/10=0 1/10=.10	
	YIELD	5/40=.13 25/40=..63		6/33=.18 20/33=.61	
	LOSE				0/6=0 1/6=.17

The upper set of numbers in each cell represents the number of wars divided by the total number of conflicts falling within the cell category. The low set of numbers represents the number of violent conflicts (wars and interventions) divided by the total number of conflicts (wars, interventions and threats) falling within the cell category.

under the "Resist" condition should be significantly lower than under the "Fight" circumstance. Of the twenty-nine disputes for which both i and j shared the perception that the conflict fell within the "Resist" category, 10, or thirty-four percent, became wars. This is significantly less than ninety-two percent, with the attendant z-score being 4.168.

Hypothesis 4 claims that the likelihood of war under the "Yield" condition is still lower, and indeed it is. When both sides perceive their conflict to require a "Yield" (as they did thirty-three times), only six conflicts, or eighteen percent, escalated to warfare. The attendant z-score comparing "Yields" to "Resists" is 2.147, which indicates a significant difference.

Hypothesis 5 postulates that under the "Lose" circumstance conflicts do not become wars, so that the probability of war should approach zero. Of the six cases that satisfy the mutual "Lose" conditions of this hypothesis, five were verbal threats, and one involved an intervention in which there was a loss of between 101 and 250 lives. These results support the expectations found in the sixth hypothesis.

Hypothesis 6 focuses our attention on situations in which the antagonists in a serious dispute perceive the situation differently. In particular, this hypothesis draws attention to the fact that the decision to escalate lies primarily with the target of a hostile demand. This is not because the target perceives more accurately than the initiator, but because the

target acts on her/his perceptions just as the initiator acts on her/his perceptions. Thus, if the target believes that capitulation is appropriate, it really does not matter that the initiator was prepared for strong resistance from its opponent. It is completely within the control of the target to yield. Likewise, if the initiator perceives that its demands should prompt a quick surrender, that will not deter the target from fighting if the target perceives fighting to be appropriate. What do we find?

The association is in the predicted direction, but there is not a significantly higher probability of war when j perceives the situation to warrant resistance than when i does. When only i perceived that war was possible (i.e., i perceived the situation to be in the "Fight" or "Resist" categories), zero out of ten disputes escalated to warfare. When only j thought war was possible (i.e., only j perceived the situation to be "Fight" or "Resist", five of forty events became wars. However, there is a much higher probability that the conflict will escalate beyond a mere verbal threat to include violence. Less than one fourth of the conflicts in which i's perception of the prospect of violence was greater than j's perception actually became violent, while twenty-five of forty disputes (or over sixty percent) escalated to include violence when j's perception of the prospect of violence was greater than the perception of i. This difference is significant, with the attendant z-score being 5.912.

Let us now turn to the seventh hypothesis, in which the level of fatalities across the conflict categories is discussed. It will be recalled that I hypothesized that "Fight" situations generally escalate to a more severe level of violence than do disputes in the "Resist" category. We can add considerable discrimination beyond the three-fold categorization of War, Intervention, and Threat to describe disputes. Gochman and Maoz have coded disputes in terms of the number of fatalities, using a six-fold scheme (Gochman and Maoz, 1982). Cases in their category 1 had no fatalities, while those in category 2 had 1-25 fatalities. Category 3 involves disputes in which 26-100 fatalities occured, while category 4 includes 101 to 250 deaths. Category 5 disputes experienced between 251 and 500 fatalities, while disputes in the sixth category had more than 501 deaths (and includes all Singer and Small wars). Fatality category 6 was both the median and modal category for conflicts satisfying the "Fight" condition. Although this is a prominent category for disputes involving the "Resist" condition, the modal category is 1, indicating that many "Resist" disputes were resolved by peaceful means, with no fatalities. The distribution of fatalities across these two conditions is significantly different, and in the predicted direction, with the strength of that difference being so large that it would have occurred by chance fewer than one time in one hundred. Interestingly, each adjacent dispute category -- from Fight to Resist, from Resist to Yield, and from Yield to Lose -- involves an equivalently

significant decline in the level of associated fatalities. Indeed, the strength of the decline is so marked that if we compare the two extreme situations -- Fight and Lose -- with respect to fatalities, we find Kendall's tau equals -.64, with the associated probability that this association has occurred by chance being less than one per ten thousand.

All seven hypotheses have been strongly supported by the evidence. We have found that the revised model is a powerful tool for predicting conflict escalation, both with respect to movement from nonviolent to violent conflict and with respect to the level of fatalities associated with the use of violence. As we move down the quadrants in figure 4 we have found that the probability of violence drops, and when violence occurs, its magnitude also drops. The results reveal that differences in perceptions have a profound impact on conflict escalation. When the target believes it has a credible prospect of extracting some advantage from fighting, violence is several times more likely than when only the initiator believes the target could derive such an advantage. What is more, the patterns of escalation reveal that nations behave in a manner fully compatible with the expected utility perspective, taking risks when leaders believe those risks are warranted, and avoiding them otherwise. Indeed, we should close this discussion by noting that when i chooses to begin a war or lesser conflict, his/her estimate of i's and j's expected utility is a rather good forecaster of the eventual outcome of the dispute. Eighty-one percent

of the time, the winner possessed positive expected utility (with that percentage for wars being 88). Given the distribution of positive and negative expected utility scores among the roughly 80,000 annual European dyads investigated here, or among the initiators and opponents that participated in the conflicts under study, we would expect so large a proportion of winners to have positive expected utility by chance far fewer than one time in ten thousand. Yule's Q for the association between i's expected utility estimates and the subsequent conflict outcome is .81, with a proportionate reduction in error of over fifty percent. For violent conflicts (wars and interventions), Q is .89, and the proportionate reduction in error is nearly sixty percent.[13] So we can see that i's estimates (as calculated here) of the solutions to equations [6] and [8] are strong predictors of the actual resolution of the ensuing conflicts (with j's estimates from equations [7] and [9] being equally good), with nearly all of the deviations from i's apparent expectations being, as noted earlier, the consequence of i's willingness to take risks.

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[13]These values, of course, underestimate the goodness of fit between the data and the theory. It will be recalled from this discussion, as well as from The War Trap, that there are several circumstances under which the theory leads us to expect the initiator to lose. One such circumstance discussed in this study involves risk acceptant, weak initiators of bilateral conflicts. Another, discussed in The War Trap, involves a situation of post-initiation deterrence (see also on this subject Huth and Russett, 1984). Still other such circumstances can be deduced from the expected utility framework.

Forecasts in Real Time

The success of the retrospective analysis provides strong encouragement for the belief that the revised expected utility models capture much of the process that leads to the initiation and escalation of disputes. But whether this approach is a valuable tool for anticipating policy decisions is quite another matter. To begin to address that issue, the Conflict Forecasting Project undertook dozens of real time forecasts concerning public policy decisions in countries as diverse as China, Pakistan, Mexico, Saudi Arabia, Jamaica, Honduras, Vietnam, the Soviet Union and Iran. In each case, experts were used to provide the following pieces of information on the issues under examination:

1. Who are the actors interested in influencing policy choices on the issues in question?

2. What outcome does each group prefer on each issue?

3. What resources (political, economic, military) can each group bring to bear on each issue?

4. How important is the resolution of the issue to each group?

With this information as inputs, all of the variables in the model can be estimated, and the models can be solved. The resulting solutions provide specific forecasts on precsie policy outcomes, along with details regarding the degree of instability and/or governmental change that is likely to accompany the resolution of the policy in question. Appendix B contains a broad sample

of analyses conducted under the auspices of the Conflict Forecasting Project. Assessments of the accuracy of the forecasts done under the auspices of this project generally suggest that the models proved accurate over ninety percent of the time both with respect to the specific policy outcomes that were predicted and with respect to the circumstances surrounding the policy decisions. The "China" forecasts, for instance, were described by the relevant analysts as enjoying about a 95 percent success rate.

Among the notable successes of the expected utility approach, some of whose forecasts are found in appendix B, as a forecasting tool are:

1. The prediction that Andropov would succeed Brezhnev, done in the context of an examination of internal Soviet policy toward Iran. This forecast was done before Andropov was elevated from the KGB and was based on data provided by an analyst who was himself surprised at the result.

2. The prediction that the joint USA-PRC communique of the summer of 1982 would not include a specific deadline for terminating arms sales to Taiwan. Most China watchers did not believe the Chinese would sign an agreement that remained vague on this issue.

3. The prediction of increased border hostilities between China and Vietnam, which, of course, have been taking place for the past year.

4. The prediction that Pakistan would move toward more clerical/theocratic forms of rule, with the Muslim clergy playing a larger role in civilian affairs.

5. The prediction that moderation of American policy toward Angola (and South Africa) could lead to increased American leverage over disputes in that part of the world. The CFP simulations of alternative American strategies greatly impressed the analyst who participated in that study and preceded the visible shift in Amercian policy that has taken place over the past two years.

6. The prediction that Mexico's austerity program would lead to a very large real decrease in wages, fuel subsidies and food subsidies in 1983, with the deficit being prought to a level of about 8.5 percent of GDP. This forecast ran contrary to the views of many Mexico watchers, yet proved extremely accurate.

These represent just a few of the diverse applications to which the models were put with great success. Of course, the forecasts were not without failures. The most notable was the prediction that Vietnam would withdraw some troops from Kampuchea. Although the Vietnamese government announced such withdrawals several months after the forecast was completed, it turned out that they were merely rotatiung troops. However, this forecasting error is instructive. The model indicated that Vietnam faced credible political pressure, but not economic or military pressure, to withdraw troops. Their announcement of intended troop withdrawals, which was made while they attended a meeting of the ASEAN nations, may well have represented a

response to the political pressures they faced. Once those meetings were ended they made clear their intention only to rotate troops.

Conclusions

Although a great deal of progress remains to be made in the development and testing of a theoretically sound explanation of conflict decision making, still the results seem encouraging. The expected utility framework has been modified to correct several deficiencies contained in its earlier formulation. This has allowed the deduction of additional propositions, and the evaluation of significant aspects of the relationship between perceptual differences across decision makers and subsequent conflict patterns. The new results do not negate any of the findings reported in The War Trap, but they do build from them and enhance them. The new results point strongly in a direction that indicates that we can predict, with considerable confidence, the likelihood of a conflict or threat becoming a war. Because many of the theory's terms are manipulable, these results suggest new directions in conflict resolution and conflict management. The results continue to support the contention that this approach may have yielded significant, lawlike generalizations about the initiation, escalation and termination of policy disputes, whether at the international or intranantional level. The results encourage the view that the models have strong predictive capabilities that may prove of considerable value to the policy analysis and policy making communities. In real-time experiments the

models proved at least as successful as in retrospective analyses at identifying critical decisions and the scenarios accompanying those decisions. The models proved powerful tools for simulating alternative strategies and for identifying mechanisms by which the United States government can improve policy outcomes around the world.

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APPENDIX A

EXPECTED UTILITIES ESTIMATED WITH THE REVISED MODEL

Wars

Year	Initiator	Opponent	$E^i(U_{ij})$	$E^i(U_{ji})$	$E^j(U_{ij})$	$E^j(U_{ji})$	R_i	R_j
1823	France	Spain	.536	-.944	1.072	-1.223	-1.000	.463
1827	UK	Turkey	.240	-.413	.773	-.818	-.958	.398
1827	France	Turkey	.377	-.674	.713	-.919	-.956	.398
1827	Russia	Turkey	.203	-.455	.668	-.680	-.957	.398
1828	Russia	Turkey	.218	-.510	.738	-.797	-.959	.354
1848	Italy	Austria	-.624	1.469	-.981	1.683	.493	.112
1848	Germany	Denmark	.342	-1.454	.993	-.943	-.700	.510
1849	France	Papal	.857	-.664	.298	-.175	.269	.779
1853	Turkey	Russia	-.543	.858	-.627	.912	.371	.253
1859	Austria	Italy	1.350	0.000	1.512	-.320	.427	-.320
1860	Italy	Papal	.424	-.206	.380	-.169	.430	.506
1860	Italy	Sicily	.274	-.057	.265	-.049	.430	.461
1864	Germany	Denmark	1.385	-1.352	1.272	-.588	-.186	.550
1866	Germany	Austria	0.000	0.000	0.000	0.000	.115	.260
1866	Germany	Baden	0.000	0.000	0.000	0.000	.115	-.919
1866	Germany	Bavaria	0.000	0.000	0.000	0.000	.115	-.786
1866	Germany	Saxony	0.000	0.000	0.000	0.000	.115	-.886
1866	Germany	HesElec	0.000	0.000	0.000	0.000	.115	-.951
1866	Germany	HesGran	0.000	0.000	0.000	0.000	.115	-.947
1866	Germany	Wrtnbrg	0.000	0.000	0.000	0.000	.115	-.908
1866	Germany	Hanover	0.000	0.000	0.000	0.000	.115	-.864
1870	France	Germany	.298	.016	.281	.029	.394	.494
1877	Russia	Turkey	.692	-.968	.793	-.502	-.194	.374
1897	Greece	Turkey	-.297	.523	-.454	.648	.457	.250
1911	Italy	Turkey	.614	-2.056	1.262	-1.571	-.640	.192
1912	Yug	Turkey	-.490	.836	-.753	1.041	.473	.200
1913	Bulgaria	Yug	0.000	0.000	0.000	0.000	.520	.546
1913	Bulgaria	Greece	0.000	0.000	0.000	0.000	.520	.530
1914	Austria	Yug	1.499	-2.153	1.587	-1.095	-.391	.546
1919	Rumania	Hungary	.357	-.143	.345	-.129	.370	.404
1919	Greece	Turkey	-.004	.216	-.003	.215	.354	.361
1939	Germany	Poland	.269	-.517	-.017	-.468	-.205	-.524
1939	Russia	Finland	.838	-.857	.830	-.827	-.041	.016
1956	Russia	Hungary	.009	.012	.066	-.048	.509	.087

Interventions

Year	Initiator	Opponent	$E^i(U_{ij})$	$E^i(U_{ji})$	$E^j(U_{ij})$	$E^j(U_{ji})$	R_i	R_j
1828	France	Turkey	.328	-.244	.330	-.246	-.959	.354
1832	France	Holland	.689	-.472	.602	-.383	.367	.469
1832	UK	Holland	.791	-.584	.650	-.431	.313	.469

1847	Austria	Papal	1.721	-1.424	1.295	-.564	-.117	.645
1850	UK	Greece	.904	-.737	.590	-.400	.250	.562
1854	UK	Greece	.893	-1.424	.429	-.274	.279	.693
1854	France	Greece	.726	-.530	.415	-.266	.429	.693
1860	France	Italy	.565	-.352	.519	-.302	.359	.430
1886	UK	Greece	.956	-.900	.659	-.462	.099	.495
1886	Austria	Greece	.701	-1.874	1.240	-1.033	-.555	.495
1886	Germany	Greece	.890	-1.768	1.137	-.841	-.436	.495
1886	Russia	Greece	1.097	-1.743	1.129	-1.112	-.324	.495
1886	Italy	Greece	.747	-1.871	1.317	-1.149	-.592	.495
1897	Russia	Greece	1.182	-1.647	1.113	-.850	-.242	.457
1897	Austria	Greece	.755	-1.925	1.375	-1.237	-.607	.457
1897	Germany	Greece	1.216	-1.507	1.093	-.739	-.216	.457
1897	Italy	Greece	.931	-1.885	1.340	-1.102	-.480	.457
1897	France	Greece	1.185	-1.447	1.037	-.761	-.170	.457
1897	UK	Greece	.970	-.964	.702	-.504	.047	.457
1905	Austria	Turkey	.497	-1.770	1.112	-1.194	-.524	.226
1905	Russia	Turkey	.872	-1.548	1.184	-1.014	-.357	.226
1905	UK	Turkey	.826	-.891	.802	-.744	.089	.226
1905	France	Turkey	.688	-1.760	1.133	-1.185	-.403	.226
1905	Italy	Turkey	.503	-2.235	1.133	-1.392	-.633	.226
1918	Russia	Estonia	1.007	-.944	.464	-.294	.061	.667
1918	Russia	UK	-.260	-.009	-.300	.018	.061	.345
1920	UK	Turkey	.840	-.732	.755	-.581	.192	.320
1920	France	Turkey	.849	-.974	.756	-.608	-.024	.320
1920	Italy	Turkey	.783	-.817	.686	-.516	.011	.320
1921	France	Germany	-.206	.054	-.133	.111	-.101	-.007
1921	UK	Germany	.093	-.023	.058	-.064	.062	-.007
1921	Belgium	Germany	-.564	.433	-.492	.457	-.081	-.007
1923	France	Germany	-.209	-.026	-.113	.057	-.148	-.027
1923	Belgium	Germany	-.591	.333	-.478	.394	-.148	-.027
1923	Italy	Greece	.759	-.703	.691	-.498	.054	.278
1938	Germany	Austria	.928	-1.732	1.269	-1.070	-.435	.322
1938	Germany	Czech	.286	-1.081	.243	-1.071	-.435	-.460
1939	Germany	Czech	.538	-1.043	.133	-1.149	-.205	-.458
1939	Germany	Lit	.782	-.985	.799	-.732	-.205	.133
1939	Italy	Albania	.808	-.834	.770	-.746	-.113	.128
1939	Russia	Poland	.397	-.439	.064	-.459	-.041	-.524
1939	Russia	Estonia	.636	-.656	.633	-.645	-.041	-.018
1939	Russia	Latvia	.633	-.668	.617	-.726	-.041	-.188
1939	Russia	Lit	.687	-.690	.648	-.614	-.041	.133
1940	Russia	Rumania	.774	-.853	.643	-.974	-.041	-.313
1948	Russia	USA	-1.881	1.460	-2.479	1.132	.417	-.378
1948	Russia	UK	-.104	-.554	-.139	-.442	.417	.028
1948	Russia	France	.399	-.720	.172	-1.002	.417	-.262

Threats

Year	Initiator	Opponent	$E^i(U_{ij})$	$E^i(U_{ji})$	$E^j(U_{ij})$	$E^j(U_{ji})$	R_i	R_j
1821	Russia	Turkey	.409	-.813	.974	-1.132	-1.000	.329
1826	Russia	Turkey	.426	-.206	.413	-.191	.384	.412
1840	France	UK	-.714	.307	-.454	.157	-.160	-.957
1840	France	Germany	-.433	-.535	-1.019	-.775	-.160	-.538

Year	Initiator	Opponent	$E^i(v_{ij})$	$E^i(v_{ji})$	$E^j(v_{ij})$	$E^j(v_{ji})$	R_i	R_j
1850	Austria	Germany	-.053	.050	-.079	.075	.048	-.755
1853	Austria	Turkey	1.043	-.486	1.013	-.402	.235	.371
1854	Austria	Russia	-.267	.287	-.269	.288	.329	.321
1856	Germany	Swz	1.153	-1.318	.979	-.374	-.293	.679
1860	France	Italy	.565	-.352	.519	-.302	.359	.430
1876	Russia	Turkey	.709	-.991	.805	-.513	-.197	.377
1878	UK	Russia	.175	-.409	-.016	-.635	-.001	-.230
1880	UK	Turkey	0.000	0.000	0.000	0.000	.020	-.264
1880	France	Turkey	.147	-.113	-.054	-.595	.230	-.264
1880	Russia	Turkey	.013	.136	.003	-.542	.107	-.264
1880	Germany	Turkey	.303	-.630	.084	-.893	-.004	-.264
1880	Austria	Turkey	-.355	-.911	-.412	-.958	-.216	-.264
1880	Italy	Turkey	-.294	.431	-.591	.040	.268	-.264
1881	Turkey	France	-.439	.531	-.465	.544	.332	.302
1885	UK	Russia	.158	-.271	-.173	-.652	.096	-.320
1890	UK	Portugal	1.257	-1.653	1.138	-.840	-.248	.470
1898	UK	Turkey	.658	-.892	.662	-.641	.095	.201
1898	France	Turkey	.677	-1.221	.831	-.847	-.195	.201
1898	Russia	Turkey	.915	-1.577	1.056	-.864	-.204	.201
1898	Italy	Turkey	.291	-1.527	.829	-.983	-.460	.201
1898	UK	France	.103	-.021	-.070	-.256	.095	-.195
1906	UK	Turkey	.745	-.790	.970	-.948	.128	.215
1908	Yug	Austria	-1.574	1.679	-2.242	1.235	.301	-.452
1911	Germany	France	-.346	-.551	-.795	-.691	-.149	-.638
1911	UK	Germany	-.468	-.252	-.392	-.176	-.207	-.149
1912	Russia	Bulgaria	1.001	-2.165	1.406	-1.111	-.526	.541
1912	Austria	Yug	1.514	-2.172	1.640	-1.253	-.376	.473
1913	Russia	Turkey	.685	-1.777	1.306	-1.247	-.514	.200
1913	Austria	Yug	1.499	-2.153	1.587	-1.095	-.391	.546
1921	France	Germany	-.206	.054	-.133	.111	-.101	-.007
1921	UK	Germany	.093	-.023	.058	-.064	.062	-.007
1921	Belgium	Germany	-.564	.433	-.492	.457	-.081	-.007
1921	Italy	Germany	-.278	.248	-.264	.256	-.026	-.007
1922	UK	Greece	.770	-.775	.680	-.586	.109	.299
1922	France	Greece	.865	-.141	.839	-.701	-.120	.299
1922	Italy	Greece	.720	-.694	.650	-.450	.024	.299
1934	Italy	Germany	-.686	.373	-.482	.226	-.361	-.754
1934	Italy	Albania	1.214	-1.430	1.287	-1.362	-.361	.033
1940	France	Russia	-.393	.177	-.355	.291	-.425	-.041
1940	UK	Russia	-.475	.419	-.691	.332	.181	-.041
1956	Russia	UK	-.224	1.216	-1.628	-.297	.509	-.726
1956	Russia	France	.379	.345	-.949	-.727	.509	-.809
1956	Russia	Poland	.003	.022	.044	-.021	.509	.179
1957	Russia	Turkey	1.634	-1.401	.201	-3.118	.516	-.725
1957	USA	Russia	-28.864	-3.244	-26.601	-3.382	1.000	.516
1960	Russia	Turkey	1.666	-1.473	.177	-3.169	.480	-.716
1960	Rusia	Norway	1.404	-1.648	-.035	-1.879	.480	-.83

Appendix B

A Sample of Expected Utility Analyses Concerning Issues in:

Turkey

Iran

Soviet Union

Saudi Arabia

China

Angola

Pakistan

Mexico

TURKEY

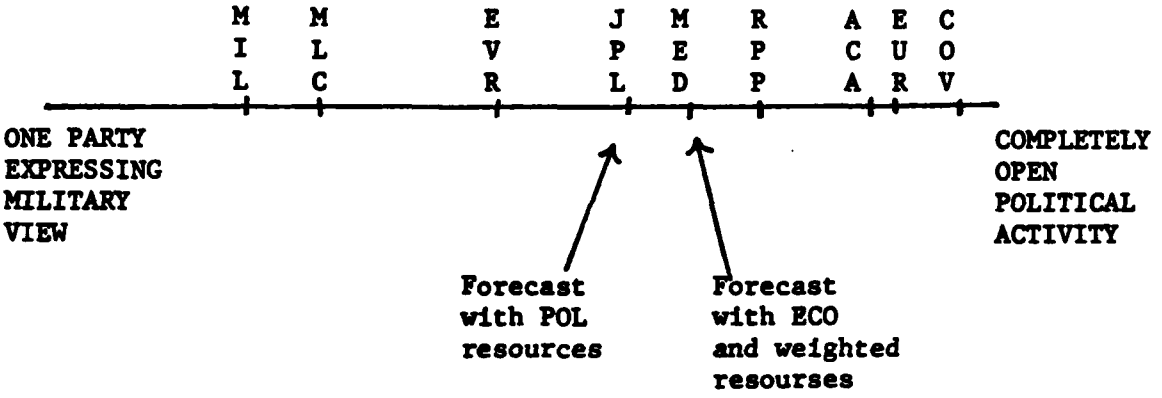
GROUPS AND CAPABILITIES

GROUP	CAPABILITIES		
	POL.	ECO.	WEIGHTED
President (EVR)	90	95	185
Ruling Military Council (MLC)	75	95	107
RPP Leadership (RPP)	50	80	105
JP Leadership (JPL)	60	50	80
Press/Media (MED)	30	85	115
Academics (ACA)	30	20	40
Military Hierarchy (MIL)	70	50	73
Western European Governments (EUR)	30	80	88
Covert Political Organizations (COV	15	40	47.5

TURKEY

ISSUE POSITIONS AND SALIENCE

ISSUE: What is the attitude of each group toward free party operation within the constitutional framework?



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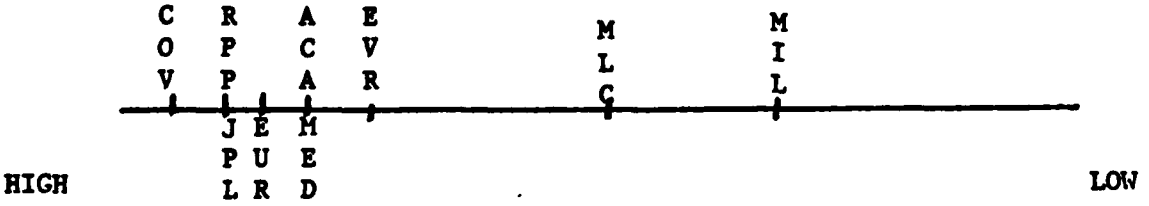


TURKEY

COALITION STRUCTURE

COALITION 1: MIL - MLC - EVR

COALITION 2: RPP - MED - JLP

COALITION 3: EUR - ACA - COV

TURKEY

RISK SCORES AND STABLE POLICY POSITIONS

WEIGHTED CAPABILITIES

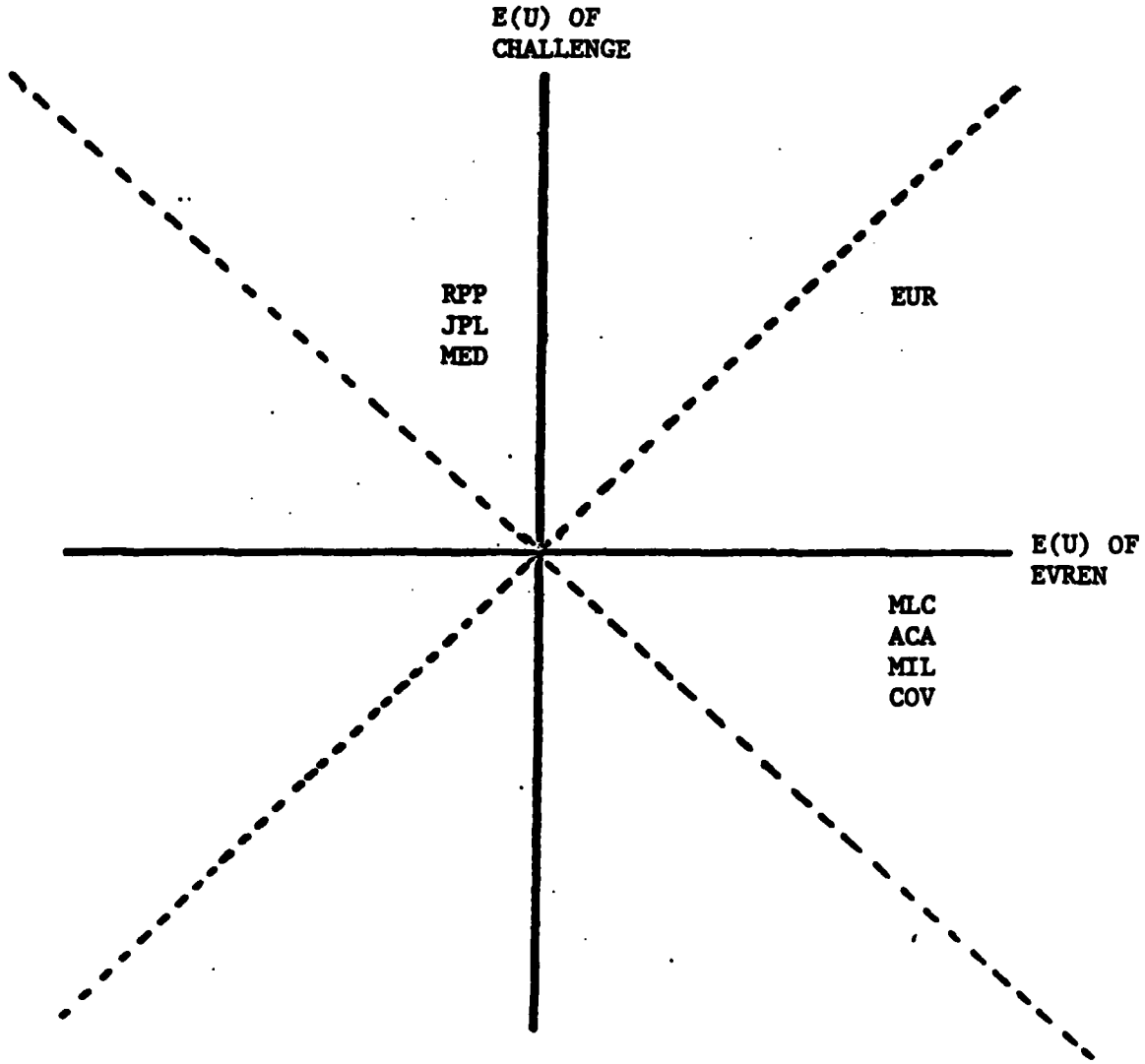
GROUP	RISK SCORES	MOST STABLE POLICY POSITIONS
EVR	-.08	MED
MLC	.39	MED
RPP	-.67	JPL
JPL	-.81	MED
MED	-1.0	JPL
ACA	-.34	MED
MIL	.53	MED
EUR	.01	JPL
COV	.08	MED

TURKEY

EXPECTED UTILITY ANALYSIS

FORECAST BASED ON RISK ORIENTATION

WEIGHTED RESOURCES

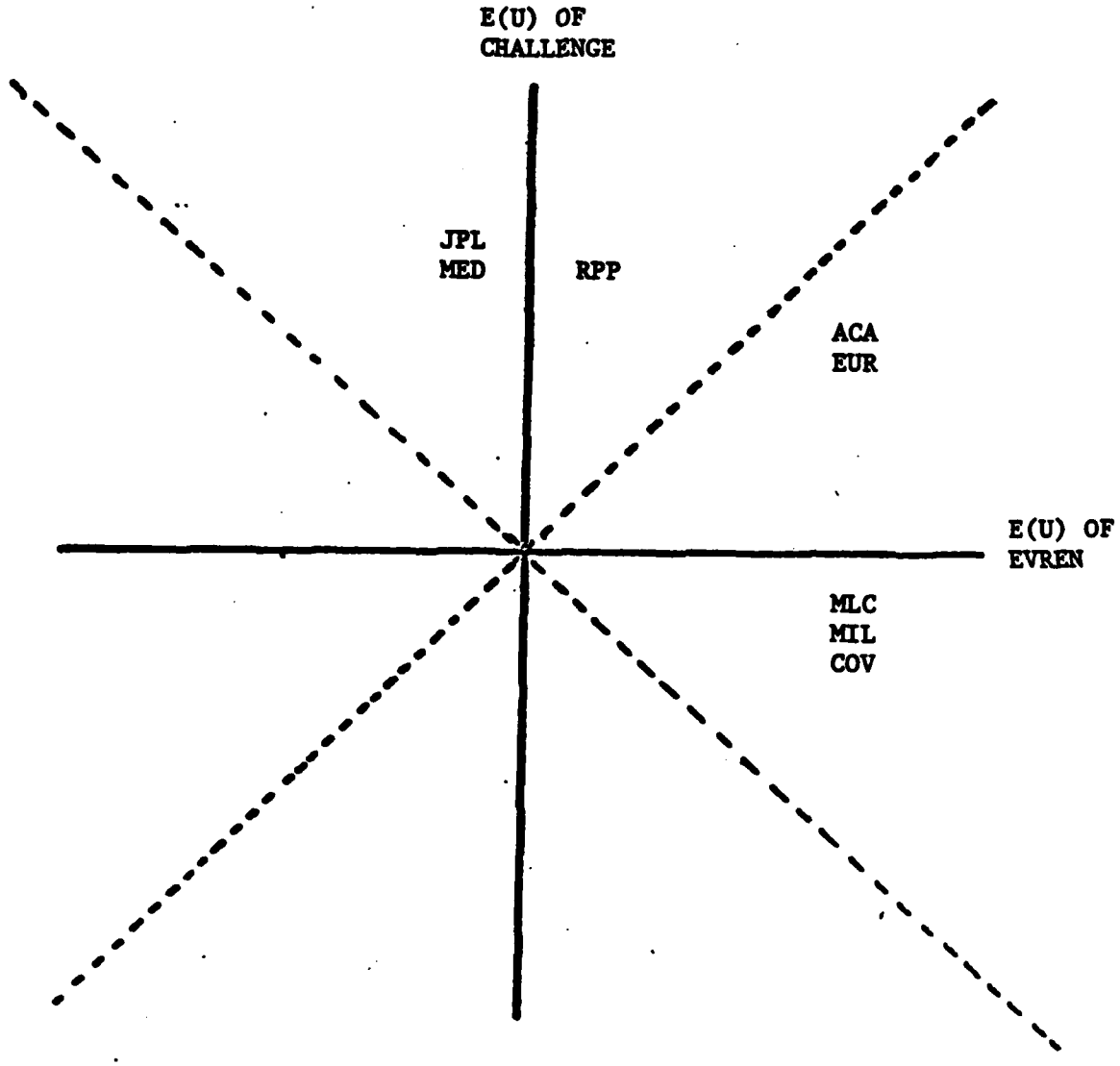


TURKEY

EXPECTED UTILITY ANALYSIS

FORECAST BASED ON "OBJECTIVE" VIEW

WEIGHTED RESOURCES



TURKEY

RISK SCORES AND STABLE POLICY POSITIONS

POLITICAL CAPABILITIES

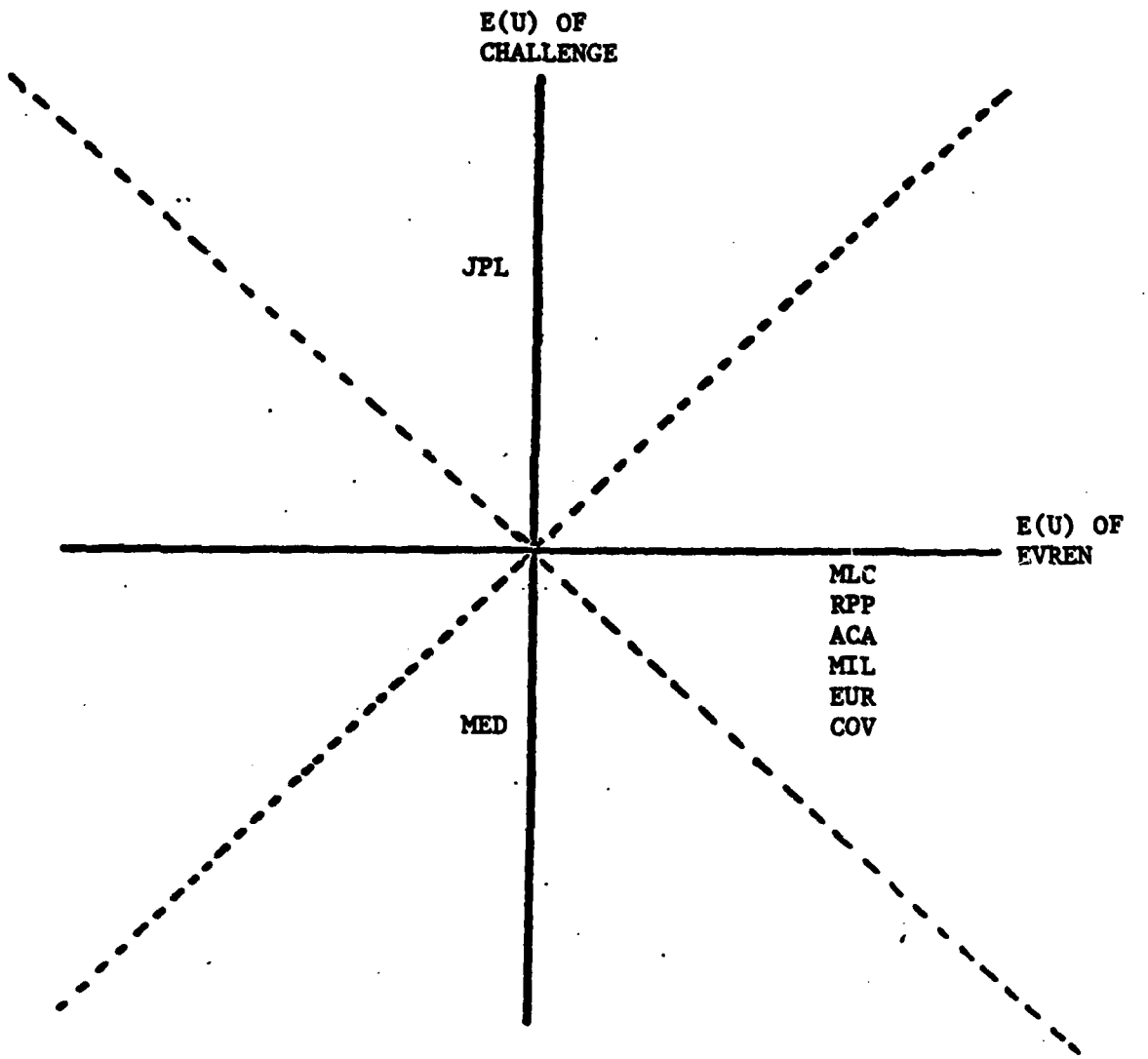
GROUP	RISK SCORE	MOST STABLE POLICY POSITION
EVR	-.32	MED
MLC	.14	MED
RPP	-.51	JPL
JPL	-.95	MED
MED	-.92	JPL
ACA	-.03	JPL
MIL	.23	MED
EUR	.11	JPL
COV	.27	JPL

TURKEY

EXPECTED UTILITY ANALYSIS

FORECAST BASED ON RISK ORIENTATIONS

POLITICAL RESOURCES

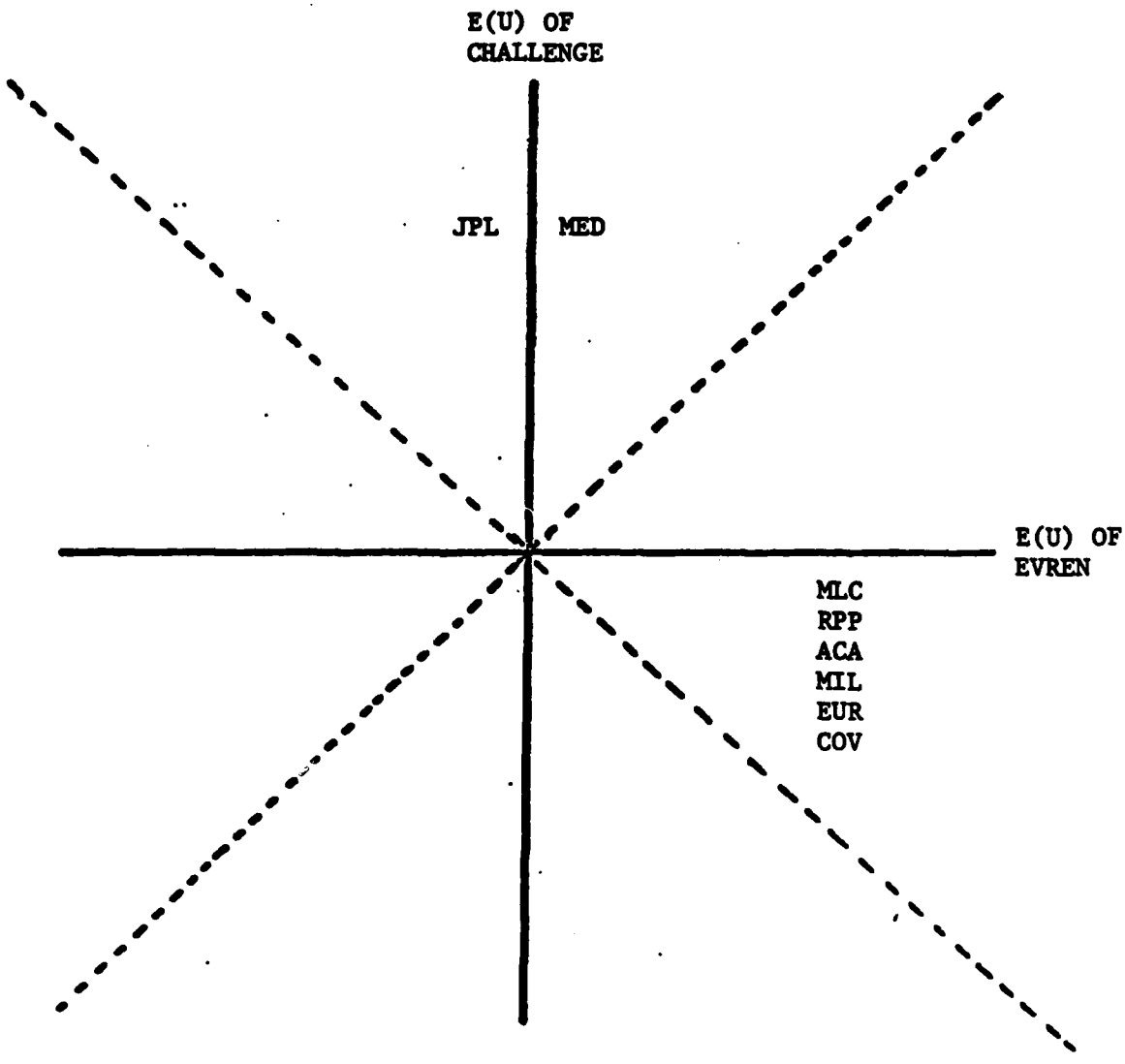


TURKEY

EXPECTED UTILITY ANALYSIS

FORECAST BASED ON "OBJECTIVE" VIEW

POLITICAL RESOURNCES



TURKEY

RISK SCORES AND STABLE POLICY POSITIONS

ECONOMIC CAPABILITIES

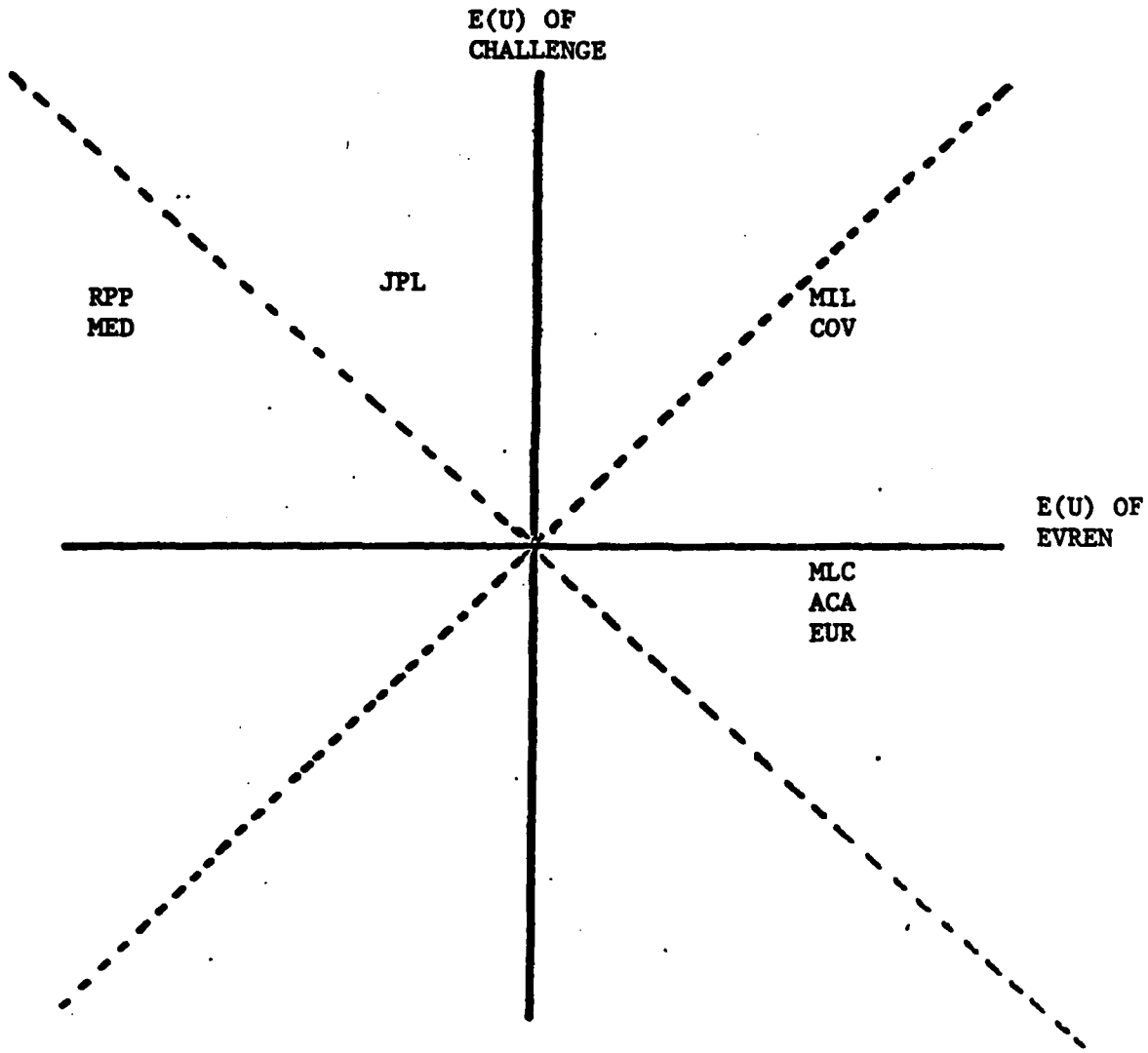
GROUP	RISK SCORE	MOST STABLE POLICY POSITION
EVR	-.07	MED
MLC	.44	MED
RPP	-.75	JPL
JPL	-.78	MED
MED	-1.0	MED
ACA	-.45	MED
MIL	.56	MED
EUR	-.01	MED
COV	.03	MED

TURKEY

EXPECTED UTILITY ANALYSIS

FORECAST BASED ON RISK ORIENTATION

ECONOMIC RESOURCES

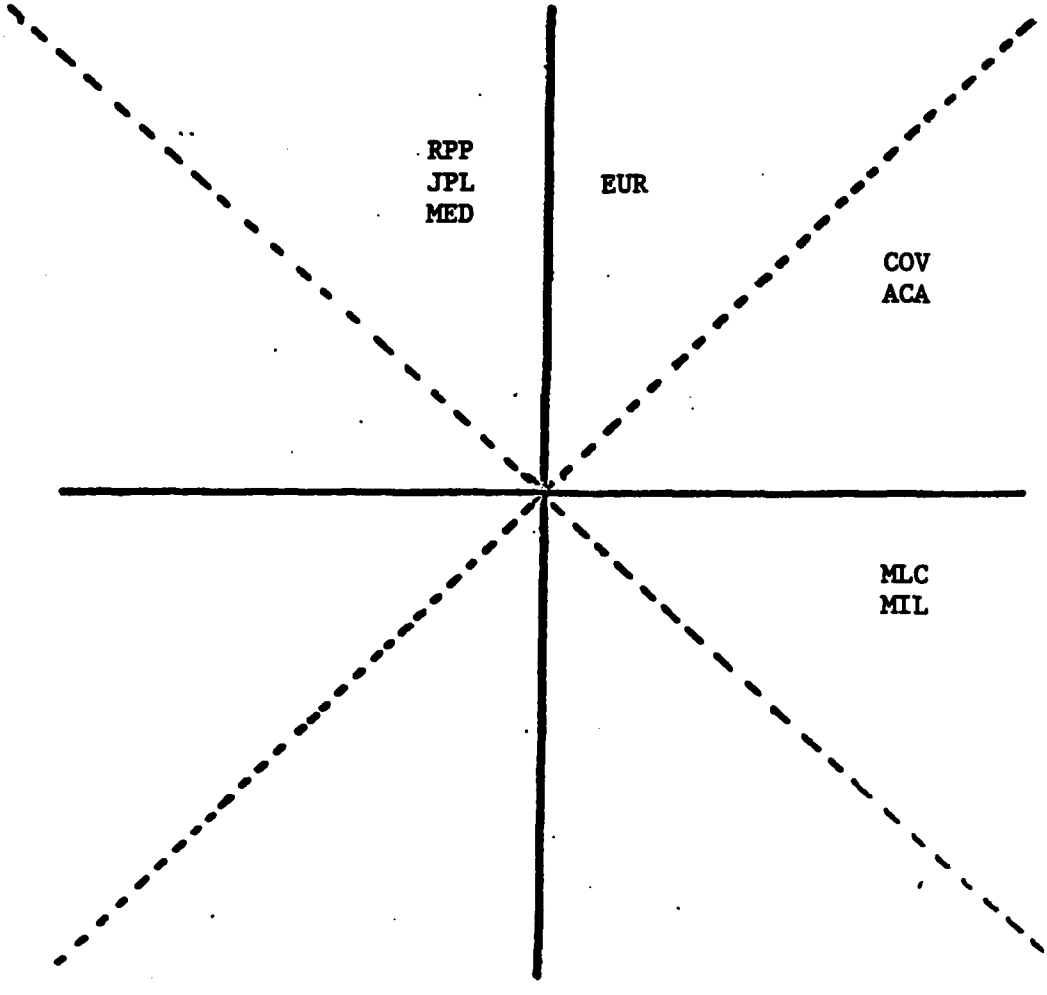


TURKEY

EXPECTED UTILITY ANALYSIS

FORECAST BASED ON "OBJECTIVE VIEW

ECONOMIC RESOURCES



Conflict Forecasting Project: Iran and Soviet Union Analysis, April 1982

by

Bruce Bueno de Mesquita

University of Rochester

The Conflict Forecasting Project is supported by a contract with the Systems Science Division of DARPA, and is administered by ONR.

April 1982

Question: What is the attitude of each group toward the idea the Soviet Union will bring Iran into the Socialist Camp?

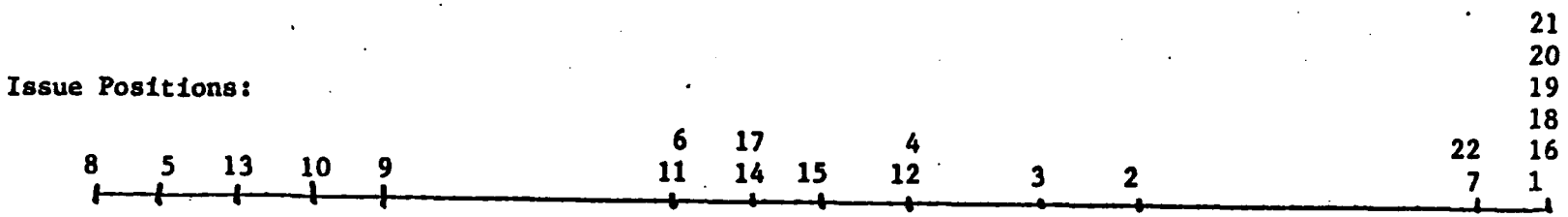
The above question was analyzed from three perspectives: (a) based on the preferences and capabilities of internal Iranian groups: (b) based on groups within the Soviet Union: and (c) based on Soviet, Iranian and other relevant actors. The issue positions and capabilities of each of the groups are presented in tables 1 and 2.

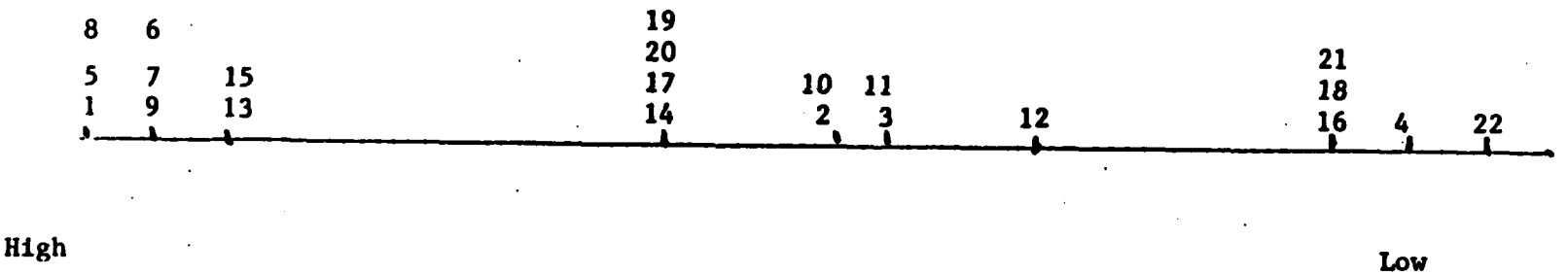
The internal Iranian analysis indicates the existence of two coalitions, one of which is quite cohesive, and one of which is not. The cohesive coalition consists of the religious zealots and the military. Labor, the civil servants, Tudeh, the Kurds, and the Bazaaris represent a loosely knit, essentially anti government coalition.

Whether political, military, or total capabilities are examined, the military is expected to win in a confrontation against any of the other internal groups. This means that there is no credible political or military pressure within Iran that can move the government closer to the Soviet camp than the small movement supported by the military. However, through the use of economic leverage, the Bazaaris and labor, as well as the Iranian military expect to dominate. This means that these groups are on a collision course, with each having little incentive to reach a compromise with the others. Given this expected utility structure, we

Table 2

Question: What is the attitude of each group toward the idea that the USSR will bring Iran into the Socialist Camp?





Group numbers correspond to Table 1.

anticipate pressure on the Iranian government to shift its position toward the policy preferences of the Bazaaris. This indicates movement toward a policy more favorable to the Soviet Union than is currently the case.

Turning now to the internal Soviet analysis we find three relatively cohesive coalitions.

Coalition (1) Foreign Policy Experts - Planners

Coalition (2) Brezhnev - KGB

Coalition (3) Party Dogmatists - Military

Brezhnev and his supporters are not likely to be influenced by other groups, unless a military strategy is followed. While Brezhnev expects to defeat all others, the KGB seems to believe it can dominate the Brezhnev faction if a military strategy is pursued. However, since the KGB and Brezhnev are in the same coalition, minor policy concessions to the KGB are likely to yield a peaceful settlement of their differences on the issue of Iranian incorporation into the Soviet sphere of influence.

We also analyzed these data from a broader political perspective in order to examine how external actors can influence the resolution of this issue. The coalition structure for this analysis is based on 22 actors:

Coalition (1) Zealots-USA-Israel-Jordan-Pakistan-Turkey

Coalition (2) Iranian Civ Servants - Soviet Planners

Coalition (3) Kurds - Soviet Foreign Policy Experts

Coalition (4) Iranian Military - Others

Coalition (5) Iraq - Libya - Syria

Coalition (6) Tudeh-Soviet Military-Sov. Party Dogmatists

Coalition (7) Brezhnev - KGB

Coalition (8) Bazaaris - Iranian Modern Labor

It is interesting to note that the coalition structure reflects a compartmentalization of interests along pragmatic functional lines, rather than along strict nationalistic lines. Thus coalition (2) is made up of Russian and Iranian bureaucrats, just as coalition (1) consists of conservative interests in the area.

The analyses based on political or military capabilities reduce quickly to a potential conflict between the United States and the Soviet faction represented by Brezhnev. Each expect to defeat the other. However, the Soviet Union expects larger gains than does the U.S.A. Usually the side with the larger anticipated gain wins.

The analysis based on economic leverage indicates that both Iraq and Syria anticipate their preferences will dominate those of all other actors. Our analysis suggests that the ultimate compromise on this issue yields an outcome near the position preferred by the Kurds and the Soviet foreign policy experts, with that outcome supported by the Iraqis, Brezhnev's faction, and others. Since this outcome depends on required compromises between the Iraqis, Brezhnev's faction, the Soviet Planners, and the Syrians, simulations using our models could indicate ways of improving the outcome from the U.S. perspective.

When we examine the same situation using total capabilities, Brezhnev and Iraq appear to anticipate being able to influence all other groups to accept their preferred outcome. However, a diminution of the Brezhnev faction's capabilities would make it vulnerable to pressure from the foreign policy experts whose preferences are for Iran to have friendlier relations with the Soviet Union, but with not as great an incorporation of Iran into the Soviet camp as is desired by Brezhnev. This a possibility to watch as Brezhnev nears the end of his life.

If the salience of this issue for the United States were assumed to increase, the situation would change significantly. My project's current resource constraints prohibit as thorough an analysis as I would like, so the following is based on an assumption that each actor treats this issue as a highly salient one. Under these conditions, the preferred position of the United States dominates most others, while the United States' position can be influenced by preferences in the Iranian military. The Iranian military, is in turn, susceptible to altering its position in reponse to pressures from those who prefer closer relations with the Soviet Union. The net effect is a significant increase in Soviet influence in Iran, an outcome which might be mitigated by greater U.S. influence within the Iranian military.

Further analyses simulating the effects of various changes in positions or capabilities as well as the effects of risk and uncertainty would be required for a complete forecast. Our preliminary forecast is that the internal situation in Iran favors the religious zealots, although pressure from the Bazaaris and others should result in movement by the Iranian government toward closer relations with the Soviets. This movement toward the Soviets is also evident in the analysis of the regional political situation, although pressures for a compromise stop the pro-Soviet drift from going much beyond the position preferred by the Kurds and the Soviet Foreign Policy Experts. Finally, there are some interesting results from the internal Soviet analysis which, though based on one limited issue, may indicate the potential of the Foreign Policy Experts to influence Brezhnev's policies in an apparently more moderate direction.

Conflict Forecasting Project: Saudi Arabia Analysis, July 1982

by

Bruce Bueno de Mesquita

University of Rochester

The Conflict Forecasting Project is supported by a contract with the Systems Science Division of DARPA, and is administered by ONR.

Summary

The expected utility analysis of current policy issues facing Saudi Arabia indicates that many of the policy positions currently in force are relatively stable. The one exception is civil liberties. On this issue and in both sets of analyses, cycles exist in which one group believes it has an advantage over another only to find that its advantage is undercut by a third actor. The third actor in turn is undercut by the first. The outcome of such cycles is generally a rapid shift in policies as each groups gains a short-term advantage. The ultimate outcome depends on each groups ability to manuever and on the redistribution of resources as the cycle progresses.

The issues on which we expect to see unchanged policies include: level of support for the PLO, willingness to accept American military assistance, the regime's current level of support for the U.S. on issues dividing the U.S. and the Soviets, and on the issue of expanding political competition. The current policy preferences and the status quo policy on these issues can be found in this report. On the question of government involvement in the economy, we forecast a moderate liberalization of government intervention brought about through pressure from the business interests and the Ulema. This issue also is not divisive in that the other groups are not really concerned about the matter. On the question of Soviet military assistance, the current policy strongly opposes such assistance. However, the analysis indicates that the Royal Family and a few other groups are less opposed to Soviet aid than the current policy implies. We forecast some change toward greater receptivity for Soviet aid than is reflected by the current policy. This is not to say that this new policy will strongly favor Soviet aid, but only that it should

be less opposed to such aid. Overall, the forecast is generally for a continuation of current policies with some tension developing in regards to the issue of civil liberties.

Our analysis of the current political situation in Saudi Arabia is based on three completed questionnaires supplied to us. Before proceeding to a discussion of the analysis, a short examination of the similarities and differences found across the three questionnaires would prove helpful. In table 1 is a list of the cohesive groups identified by each of the respondents and their estimates of each groups capabilities on political, economic, and military dimensions. Each set of capabilities has been percentaged to facilitate comparison. In addition, all three dimensions have been averaged in order to construct a measure of total resources. If we examine the three estimates of capabilities, we find that there is a fair degree of agreement between respondents 1 and 2. Both identify a similar set of groups and their estimates of capabilities are very close. For example, in both sets of responses the Royal Family is the dominant group with about 27 percent of the total resources, the religous hierarchy possesses about 11 percent of the resources, the technocrats and commoners are also fairly close. The major difference which we can identify, given the differences in the two lists, is the resources of the military; respondent 2's estimates are significantly larger than those of respondent 1. Respondent 3 identified fewer groups and believes that the vast majority of the resources reside with the Royal Family. In addition, respondent 3 indicates that there is no variance in either the issue positions or the salience of the issues across the groups indentified. Such data allow us to make only one forecast: that the Royal family is incredibly stable and that, given this expert's data, we should not expect to see any changes in policy other than those coming from decisions within the Royal family. The rest of this report will therefore focus on the data provided by respondents 1 and 2. Respondent 1 completed the entire questionnaire and respondent 2 completed only the first four questions.

Respondent 1

Group	Capabilities			
	Pol.	Eco.	Mil.	Total
Extended Royal Family (ROY)	27	20	33	27
Fahd and Brothers (FAH)	27	17	33	26
Faysal's Sons (SON)	20	13.5	8	13.8
Ulema (ULE)	17	13.5	4	11.5
Businessmen (BUS)	3.5	17	2	7.5
Western Educated Commoners (COM)	3.5	17	2	7.5
Military (MIL)	2	2	17	7

Respondent 2

Group	Capabilities			
	Pol.	Eco.	Mil.	Total
Royal Family (ROY)	33	25	27	28
National Guard and Tribes (TRI)	16	9	27	17
Shiar (SHI)	2	4	0	6
Ulema (ULE)	24	9	0	11
Merchants (BUS)	8	25	0	11
Military (MIL)	10	11	40	20
Technocrats (TEC)	6	17	5	9

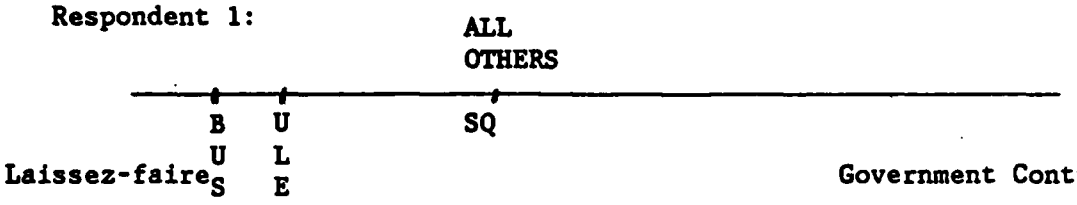
Respondent 3

Group	Capabilities			
	Pol.	Eco.	Mil.	Total
Royal Family (ROY)	90	80	90	87
Religious Hierarchy (REL)	5	5	0	3
Bedowins (BED)	5	5	5	5
Technocrats (TEC)	0	10	0	3
Military (MIL)	0	0	5	2

For each policy question a table containing the three sets of issue positions and the coalition structure, generated from the expected utility analysis, is produced. This is followed by a short discussion of the analysis. An '*' indicates the status quo position.

Question 1: What is the attitude of each group toward the role of the government in economic affairs?

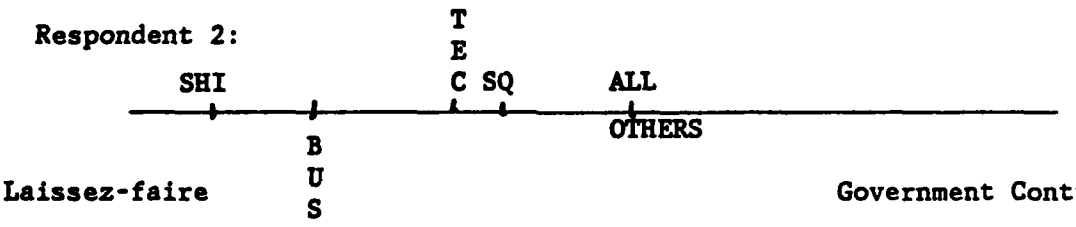
Respondent 1:



Coalition Structure: Respondent 1

ROY - FAH - SON - COM - MIL - STQ
ULE - BUS

Respondent 2:



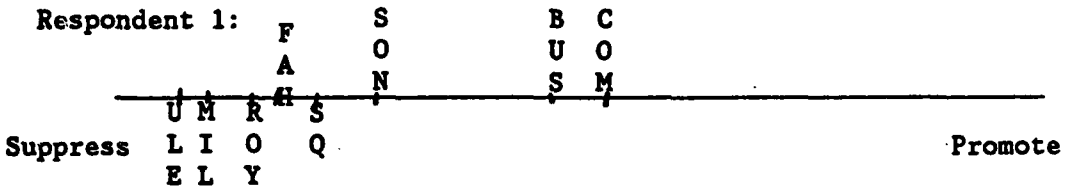
Coalition Structure: Respondent 2

ROY - MIL - ULE - TRI
SHI - BUS
TEC - STQ

On the question of the role of the government in the economy, the current status quo position in both responses is for a a mixed economy. If we examine the situation using the data provided by respondent 1, we find that the issue is not very salient to most the groups and there are not very large differences across groups when comparing issue positions. However, despite the large coalition favoring the current status quo position, both the business interests and the Ulema are able to exert effective economic and political pressure for a set of more liberal economic policies. Their ability to influence this issue is a function of their greater concern over the issue. Therefore, the outcome on this issue, whether we consider economic or political resources, is the position held by the Ulema so that we should see a shift toward laissez-faire policies. Though both the Ulema and Business interests can exert economic and political pressure to change the policy, we should be concerned with their choice of strategies. The analysis indicates that economic pressure would be more successful and therefore more likely.

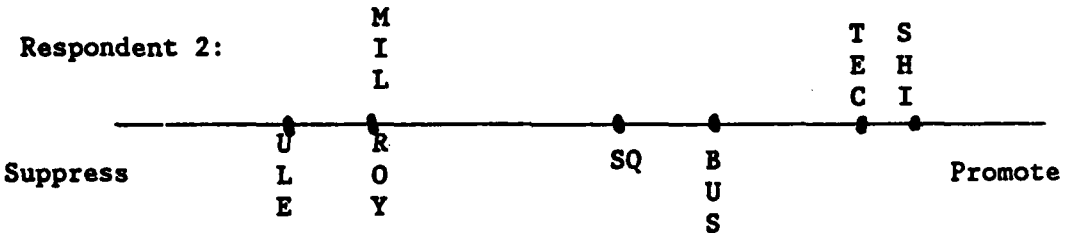
The analysis of the data provided by respondent 2 supports the forecast of a moderate liberalization in the economy. In this analysis the current status quo position is vulnerable to political pressure from the Royal family, the Technocrats, the Shia, the Ulema, and the Merchants and to economic pressure from the Technocrats, the Shia, and the Merchants. Once again, regardless of whether we consider political or economic resources, the stable outcome is the position preferred by the Technocrats. Therefore, we should see effective pressure brought to bear on policy questions related to the economy which are resolved in favor of a more laissez-faire policy.

Question 2: What is the attitude of each group toward the promotion or suppression of civil liberties such as freedom of the press and freedom of speech?



Coalition Structure: Respondent 1

ULE - MIL
BUS - COM
ROY - FAH - SON - STQ



Coalition Structure: Respondent 2

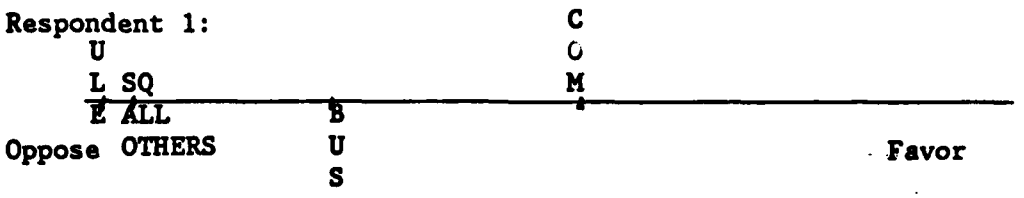
ROY - MIL
ULE - TRI
TEC - SHI
BUS - STQ

On the question of promoting or suppressing civil liberties in Saudi Arabia, we find that a minor shift is possible through the use of political leverage and more dramatic change is possible with economic pressure. The data provided by respondent 1 indicate that the current status quo position is vulnerable to change by the Royal Family, Fahd and brothers, the Ulema, and the Military. All of these groups oppose any liberalization of civil rights. The analysis indicates that the outcome on this issue, with political resources, should be the position desired by Fahd and brothers. If the issue was to be resolved through the use of economic resources, as preferred by the business interests, then the ultimate outcome is somewhat less certain. A cycle exists whereby the Military believes that it dominates the Ulema, the Ulema dominates the Business interests, and the Business interests dominate the Military. Such situations generally produce rapid changes in policy as each group seeks to have its policy preference implemented only to find themselves challenged by some other group. This cycle though should not lead to dramatic policy shifts since it can easily be broken by a slight policy shift by either the Military or the Ulema.

Our analysis of this issue using the data provided by respondent 2 also indicates that this is a potentially divisive issue. The analysis using political resources indicates a very large cycle where every group believes that it has the ability to influence another group only to find that it is then vulnerable to the political pressure of a third group. In addition, each group believes that it can change the current status quo position. The dominant two groups on this issue are the Ulema and the Technocrats. We expect to see them seek to position themselves such that the cycle is broken in their own favor. The analysis based on economic capabilities indicates

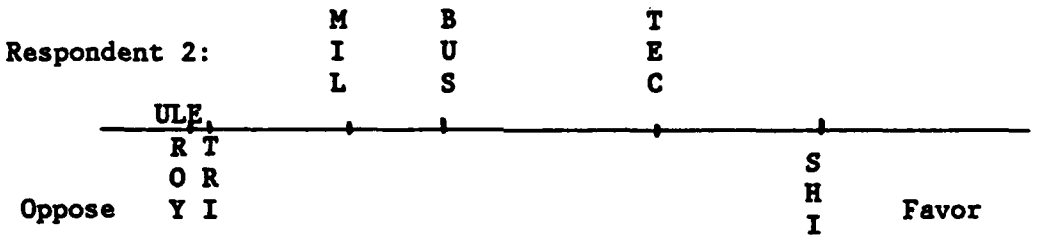
that everyone believes that they can influence the current status quo. The dominant group on this issue, using economic resources, are the merchants. They prefer a moderate liberalization. The upshot here is that the current status quo position, which is closer to the preferred position of the Merchants, already reflects the compromise we would expect given the differences in the political and economic analyses. Therefore, the potential for change exists since many groups believe that they are able to influence the current policy.

Question 3: What is the attitude of each group toward internal political competition?



Coalition Structure: Respondent 1

ROY - FAH - SON - COM - MIL - STQ - ULE - US



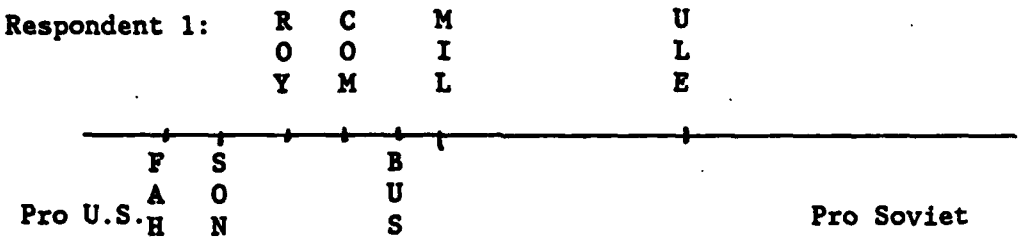
Coalition Structure: Respondent 2

ROY - ULE - TRI
TEC - SHI
MIl - BUS

On the issue of internal political competition in Saudi Arabia, our analysis of respondent 1's data indicate that there is credible economic pressure from the business interests to shift the current policy but that this shift toward greater internal political competition is held in check by the dominant political influence of the Ulema, who oppose any political competition. In such a situation, the Business interests would seek to have the issue resolved through the use of economic resources, however, what is more likely, given the low salience of the issue to the business interests, is the business interests will trade their support on this issue for support on another issue which is more salient to them.

Our analysis of respondent 2's answers to our questionnaire indicate that we should not expect to see any change in the current policy toward political competition. The Royal Family dominates this issue regardless of whether we consider political or economic resources. Both forecasts then are for a continuation of current policies.

Question 4: Please locate each group on the continuum in terms of being very favorable toward the policies of the United States to being very favorable toward the policies of the Soviet Union.



Coalition Structure: Respondent 1

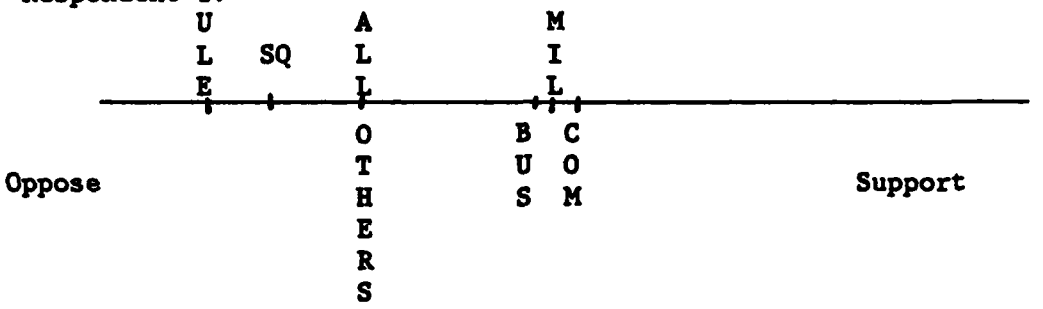
FAH - SON

BUS - MIL - COM - ULE - ROY

On the question of support for United States or Soviet policies, the Royal Family is not subject to credible political or economic pressure from any group. The respondent, however, did not identify the current status quo position so we can not determine whether there will be any change in the current policy. However, to the extent that the current position deviates from the preferred position of the Royal Family, we should expect to see pressure brought to bear on this issue by the Royal Family for change.

Question 5: What is the attitude of each group toward Soviet military assistance to Saudi Arabia?

Respondent 1:



Coalition Structure: Respondent 1

ROY - FAH - SON

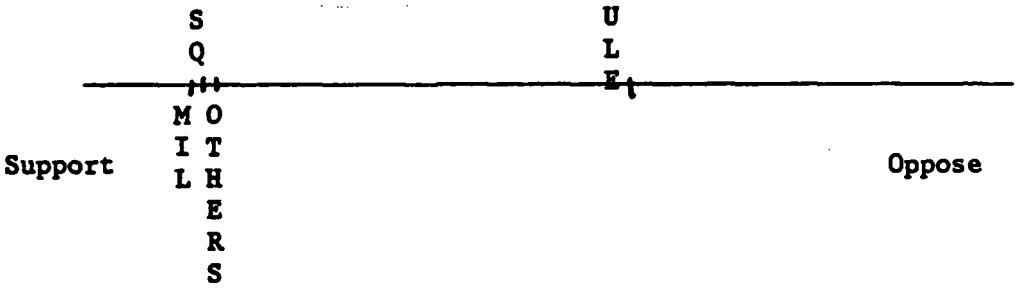
BUS - MIL - COM

ULE - STQ

On the issue of Soviet military assistance to Saudi Arabia we find that the current status quo position is susceptible to pressure from the Royal Family, Fahd and brothers, and Faysal's sons. These three groups all prefer a policy slightly more favorable to the Soviet Union. These groups are in position to exert both economic and political pressure to achieve their preferred policy. The new status quo position should be at the position held by the Royal family.

Question 6: What is the attitude of each group toward American military assistance to Saudi Arabia?

Respondent 1:



Coalition Structure: Respondent 1

ROY - FAH - SON - ULE - BUS - COM

MIL - STQ

On the question of American military assistance to Saudi Arabia we find that there is general agreement in the country favoring American military assistance. Only the Ulema prefer a more neutral policy toward American aid, although the issue is not very salient for them. Our analysis of the issue indicates that there is no pressure to change the current policy.

Question 7: What is the attitude of each group toward the policies of the Palsestine Liberation Organization?

Respondent 1:

Coalition Structure: Respondent 1

BUS - COM

ROY - FAH - SON - ULE - MIL - STQ

On the issue of support for the Palestine Liberation Organization we find that the current policy, which is supportive of the PLO, is not vulnerable to any pressure from either the Business interests or the Commoners--the two groups preferring a less supportive policy.

Conflict Forecasting Project: China Executive Summary, July 1982

by

Bruce Bueno de Mesquita

Enclosed are brief summaries of the expected policy outcomes on forty-nine issues submitted to me, including a "risk score" for each actor. One issue was excluded (M-4) because I was not supplied with a preferred policy outcome on that issue for the Reformers. The brief summaries specify whether the policy in question is likely to change, what the new policy is forecast to be, and which groups will be responsible for bringing about the policy change (or for preserving the current policy in force). The "risk score" indicates how willing to take chances each group is on each issue. A score around zero indicates that risk-taking propensities have very little impact on the decision-maker's judgment. As the risk score approaches +1.000, the relevant group is expected to <u>overestimate</u> its true potential for achieving its goals. As the score approaches -1.000, the relevant group is expected to underestimate its true potential for influencing the resolution of debate on the policy in question.

All of the enclosed analyses are predicated on the assumption that all resources are simultaneously used to resolve debate over each issue. Different results might emerge if the analyses were based on only economic or only political or only military resources, or if the analysis assumed that each group mobilized its largest resource in a strategic effort to maximize its influence over the policy outcomes. With this caveat in mind, I review here very briefly the main thrust of the analyses.

TABLE 1

AVERAGE RISK SCORES

GROUPS

RESOURCES	REFORMERS	SUPPORTERS	READJUSTERS	ELDERS	PETROLEUM	WHATEVERISTS
POLITICAL	-.320	-.701	-.727	-.091	+.559	.312
ECONOMIC	-.317	-.783	-.508	-.244	-.496	.496
MILITARY	-.309	-.375	-.693	-.221	-.331	.178
FOREIGN POLICY	-.646	-.784	-.651	-.284	-.628	.541

Table 1 shows the risk-taking orientation of each group by each issue category (Political, Economic, Military, and Foreign Policy). Generally, the Supporters and Readjusters are least willing to take risks, while the Whateverists are most risk acceptant. The Elders tend to be only modestly affected by their risk-taking propensity as they are close to being "risk neutral." The Reformers are moderately risk averse except with regard to foreign policy where they are quite unwilling to accept new risks. This is precisely the area in which the Whateverists are most willing to take chances. Of course, as will be evident from an examination of the report on each issue, there is considerable variability in each group's risk taking orientation as one moves from issue to issue. This is likely also to be true as one moves from a combined resource strategy to individual resource strategies (i.e., political, economic, or military).

The first four political issues revolve around questions pertaining to potential changes in the high level leadership. The analysis indicates that in the short run no major changes are anticipated.

However, as the analysis of the next several issues indicates, this does not mean that China is expected to be without significant political changes. The evidence suggests important structural changes, including a rejuvenation of the bureaucracy and retirement of some older veterans. At the same time, there is credible pressure favoring a fixed term for those in important positions, and for elevating more scientists, technicians, and other "technocrats" into high level bureaucratic positions. The introduction of these elements into the bureaucracy should not, however, be taken to suggest a greater broadening of political participation. The analysis indicates that there will not be an increase in mass participation, nor an expansion or liberalization of influence for artists, writers, or local and provincial officials. Instead, China will continue to maintain much of its traditional "ideological" symbolism.

Some of the policies for which no change is forecast are based on a tenuous compromise of competing interests. As explained in the more detailed issue by issue analyses that are attached, these policy questions must be watched closely. Small changes in capabilities, salience, or policy preferences could produce dramatic effects.

Economic policy in China appears to be in a period of transition. Few policies are expected to change markedly in the short run, but many policies are expected either to experience small shifts or to represent especially tenuous compromises that could easily be altered with a small change in capabilities, salience, or preferences. The analysis indicates that we should expect some increase in the priority given to agriculture and light industry over heavy industry, there should be a small increase in the acceptance of market forces, and a decrease in the CPLA's production role. Further detail may be obtained by examining the individual issue

analyses that are enclosed.

China appears to be in a period of considerable stability with respect to its military policies. Little or no change is forecast with regard to the military budget, the military's modernization priority, efforts to leapfrog into modernization via technology transfers or co-production techniques, or in the general structure of the military leadership. Furthermore, we can expect the CPLA's role as a brake on reforms to increase in the military sphere. Hu Yaobang's prospects seem to be improving, as does the expectation that more science and technology resources will be shifted to the military.

China's foreign policy, unlike its military policy, appears to be facing substantial changes. In general, so long as the United States lives up to expectations, the analysis consistently shows China's policy moving toward the U.S., away from any notion of "even handedness" with the Soviet Union, and toward an increased willingness on the part of the Chinese to face border hostilities with either the Soviet Union or Vietnam. China's leadership seems to lean toward a slight slowdown in efforts to integrate Taiwan, so long as the Taiwanese do not acquire a nuclear capability or enter into some arrangement with the Soviet Union (or completely disavow China's diplomatic efforts). On the other hand, the Chinese are prepared to improve relations with the Soviet Union if the United States fails to rearm China, or if the United States either shows weakness toward the Soviets or attempts to reach some "condominium" with them that the Chinese perceive to be contrary to their interests, It is also likely that Chinese policy would shift toward an effort to improve relations with the Russians, once the Soviet succession takes place.

The analysis also shows some increase in Chinese support for insurgency, although there will be no meaningful shift in policy toward LDC's in general, nor toward the Korean penninsula. China appears committed to maintaining relations with the United States, even if American policy toward Taiwan does not include the specification of a termination date for arms sales to Taiwan. It does not appear that a shift in policy is likely with regard to China's "third world" concept, nor with regard to strategic-economic relations with Japan. In short, China appears to be entering a period that is generally favorable to American interests and contrary to Soviet interests. So long as we are able to live up to Chinese expectations -- and they appear to continue to expect to maintain a relationship based on mutuality of interests, and not on something as amorphous as "friendship" -- it seems likely that China will live up to our expectations.

PS-1

Issue Nr ---

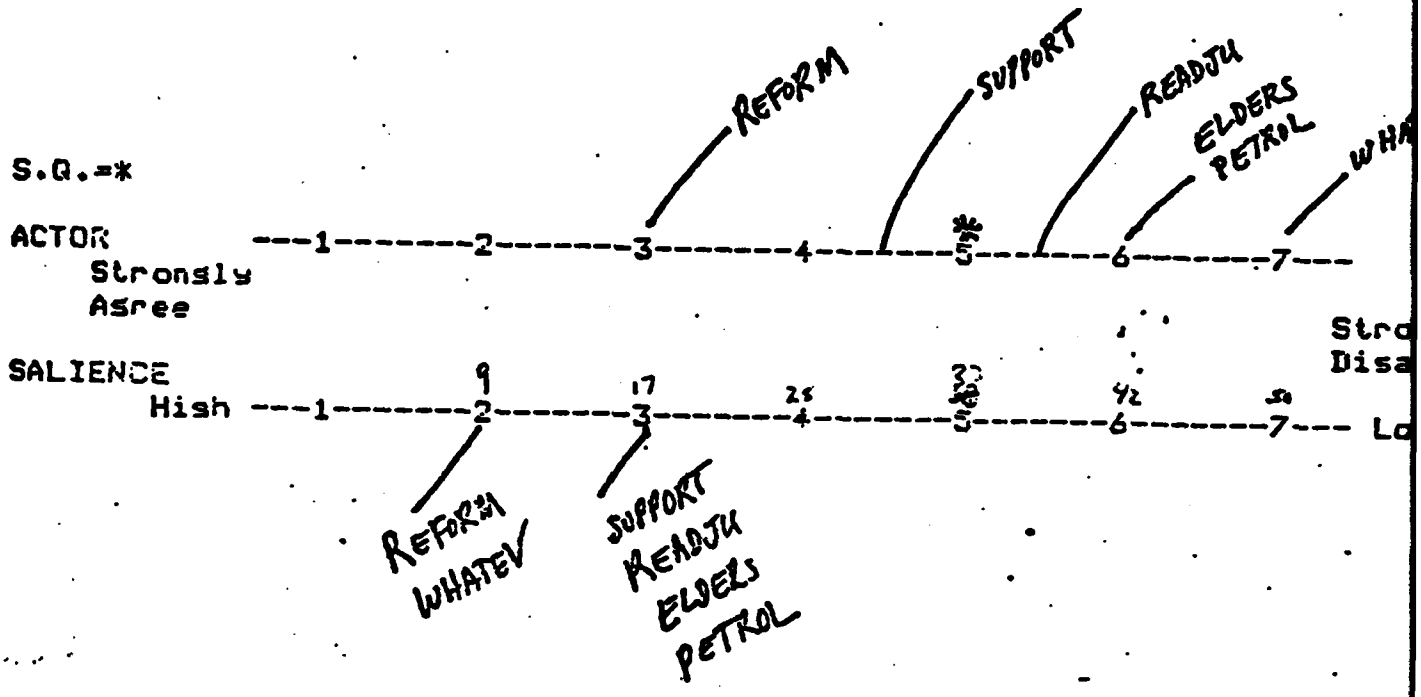
1 APR [illegible]

Date----------

SUBJECT:

Analyst--SEN

Hua Guofeng should be purged from the Politburo but not from the Party.



	Reformers	Supporters	Readjusters	Elders	Petroleum	Whateverists
Risk Score	.702	-.452	-.849	-.542	-.542	.305

The current policy in force is not likely to change although it represents neither a consensus nor the preferred outcome of a dominant interest. Rather, the current policy represents a tenuous compromise between the interests of the Readjusters, Supporters, and Reformers. The most stable position for the status quo in terms of minimizing credible efforts to alter it further would be to locate the policy outcome at the preferred position of the Readjusters. However, both the Reformers and the Supporters have a small edge over the Readjusters. The Supporters, in fact, are the dominant interest, but they stand to acquire only a very small gain by altering the status quo, while having to face some conflict with others over it. Consequently, the forecast is for no change.

PS-2

Issue Nr ---

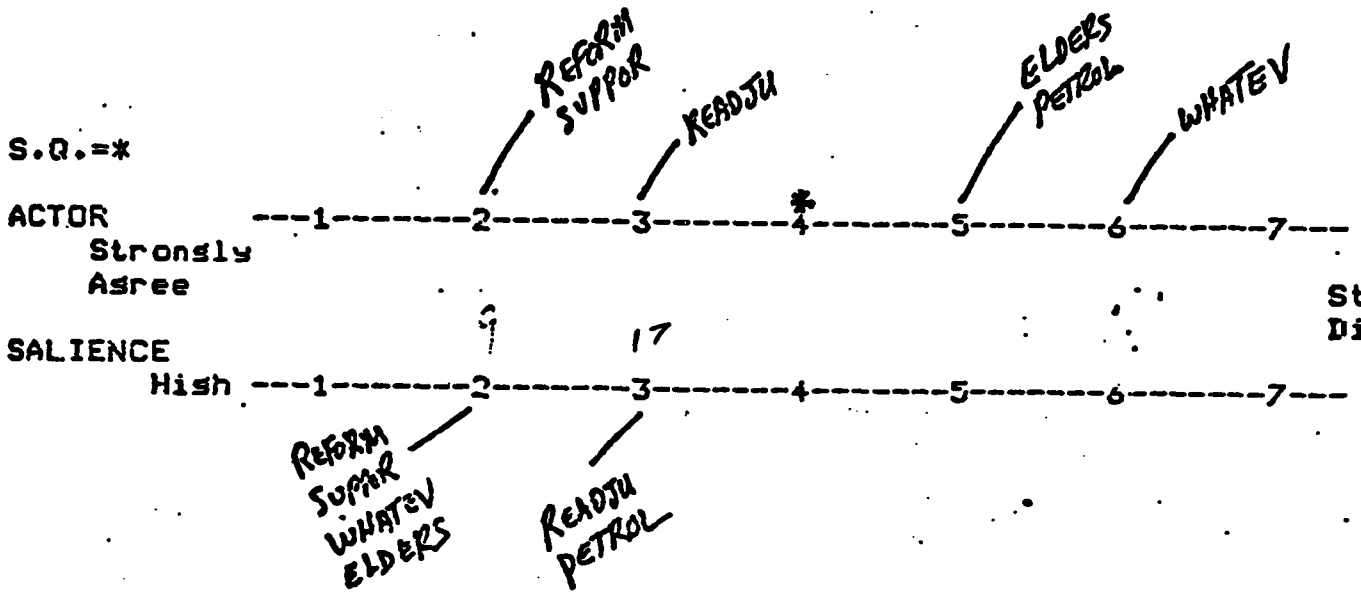
1 APR 1982

Date----------

SUBJECT:

Analyst---SEN---

The Chief of State position should be reinstated, including responsbility as the CINC,CPLA.



	Reformers	Supporters	Readjusters	Elders	Petroleum	Whateverists
Risk Score	-.944	-.935	-.908	.176	.039	.503

The optimal position for this policy is at position "3", which is the preferred outcome of the Readjusters. A shift in policy to that position would minimize subsequent challenges on this issue. However, the outcome preferred by the Readjusters is offset by the fact that the Elders have a slight advantage over the Readjusters. But the preferred outcome of the Elders/Petroleum coalition is not the only one that can defeat the objectives of the Readjusters. The Reformers, who prefer a quite different policy from that desired by the Elders, can also defeat both the current policy in force and the outcome desired by the Readjusters. Neither the Reformers, nor the Elders/Petroleum coalition believe they can defeat the other. The upshot is a compromise between these competing interests that leaves the policy between position "3.5" and position "4" above.

PS-3

1 APR 1982

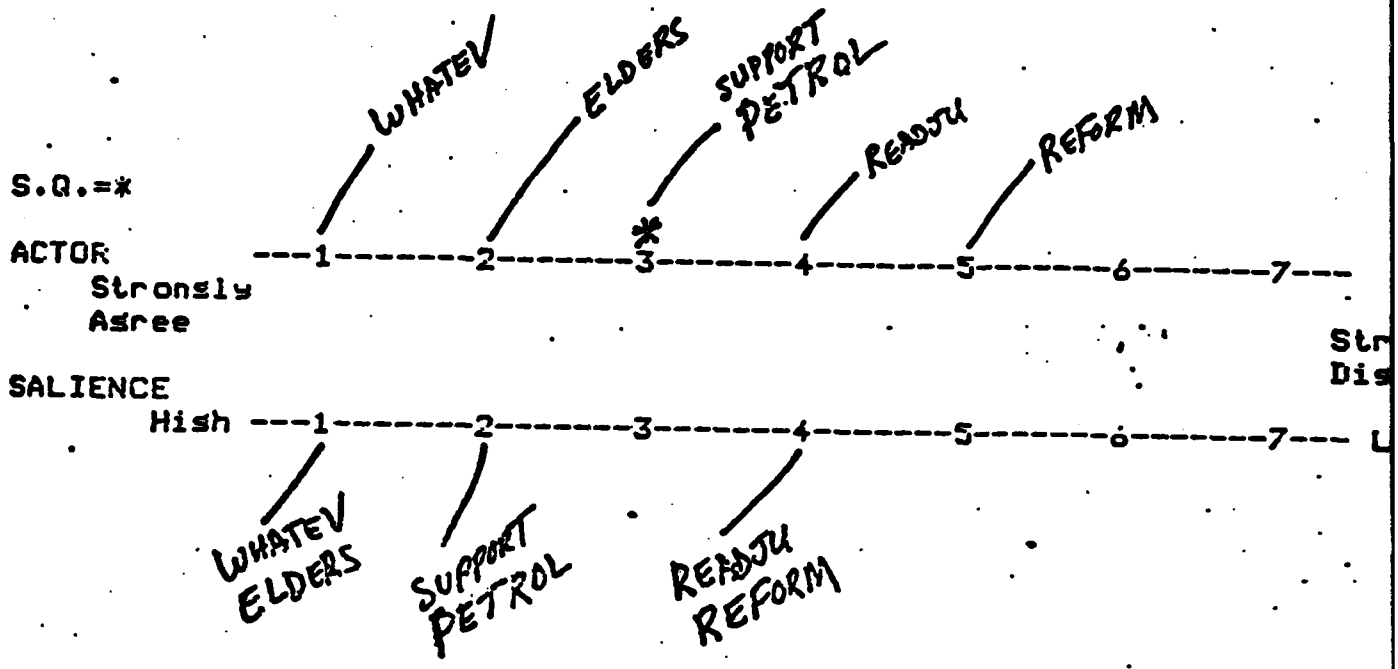
Issue Nr ---

Date----------

SUBJECT:

Analyst SEN

Because the 6th Party plenum fairly evaluated Mao, further criticism of him should be avoided.



	Reformers	Supporters	Readjusters	Elders	Petroleum	Whateverists
Risk Score	.457	-1.000	-.190	-.150	-1.000	.316

The current policy in force is not susceptible to change by any group given that all resources are marshaled to resolve debate over this issue. There is a possibility of modest pressure from the Reformers, but this pressure will be defeated without provoking a policy change.

PS-4

Issue Nr ---

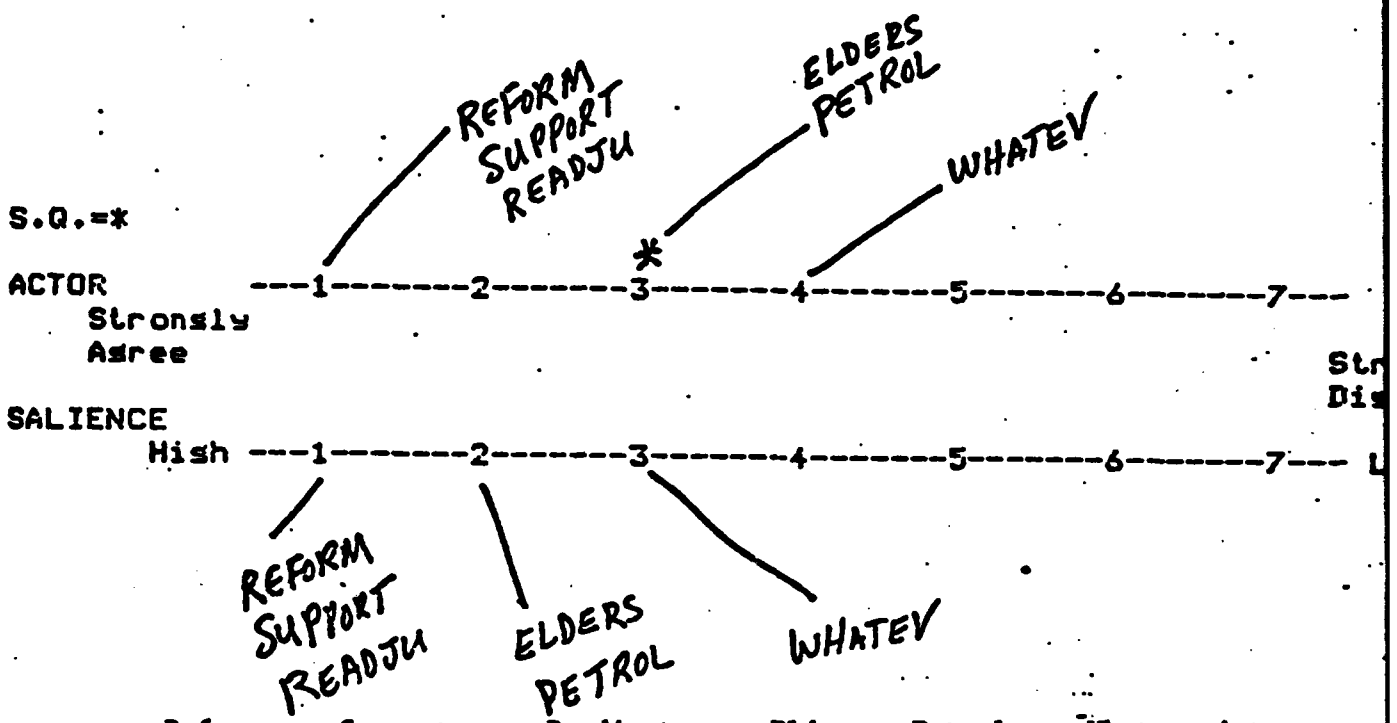
1 APR 1982

Date----------

SUBJECT:

Analyst SEN

The successor leadership to Deng should continue to be a collective one, with "cult personality" as an anathema.



	Reformers	Supporters	Readjusters	Elders	Petroleum	Whateverists
Risk Score	-1.000	-1.000	-1.000	.149	.149	.582

The current policy in force is not likely to change, although it is not at its optimal position. The optimal position is at the outcome preferred by the Reformers, Supporters, and Readjusters. That is optimal in the sense that it would provoke the fewest credible challenges. However we do not forecast a shift to that most stable position because no group believes it can defeat groups preferring other outcomes, and no group believe it can dominate those who support the status quo over any given group's preferred outcome. Further analysis would reveal the conditions under which the status quo could be changed.

PS-5

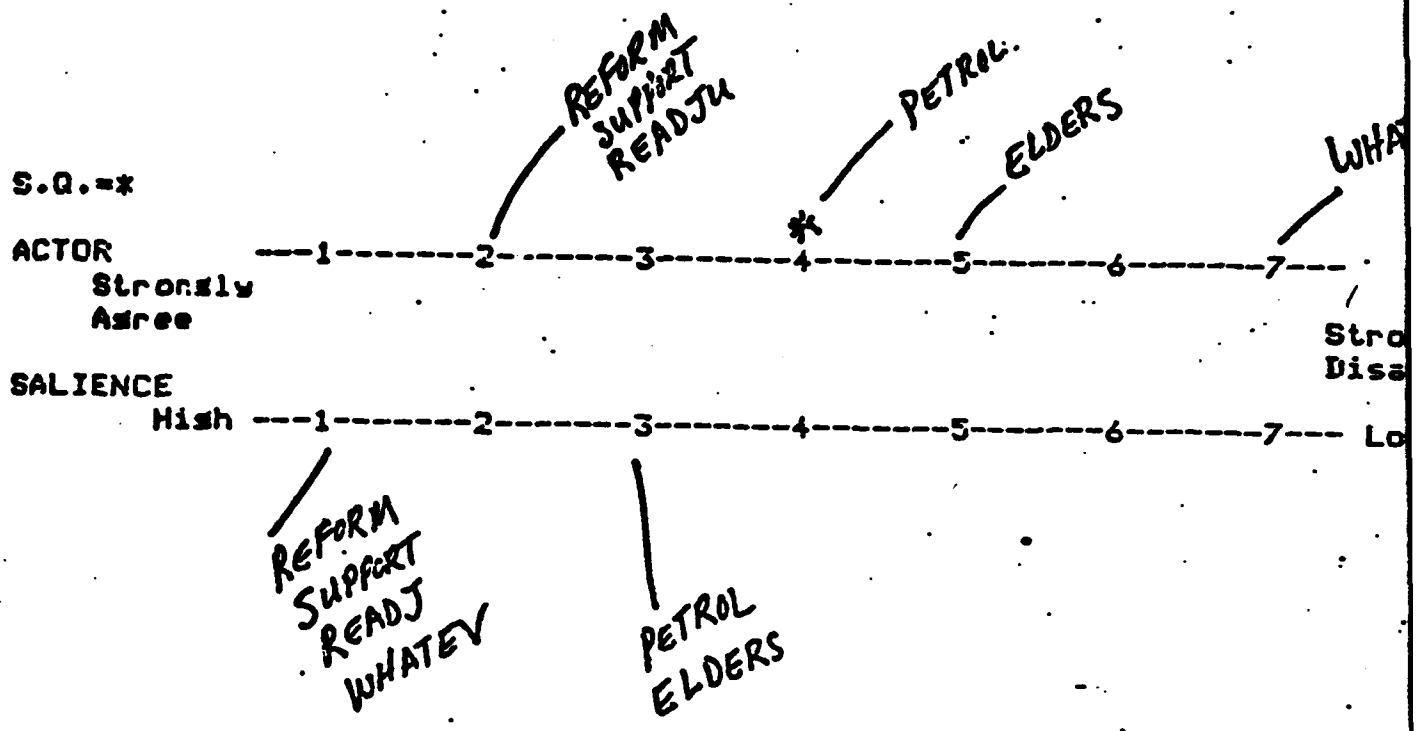
Issue Nr ---

Date 1 APR 1982

SUBJECT:

Analyst SEN

Rejuvenation efforts should be intensified (slimming down the govt bureaucracy, rectification of party cadre, and restructuring of the CPLA).



	Reformers	Supporters	Readjusters	Elders	Petroleum	Whateverists
Risk Score	-1.000	-1.000	-1.000	.219	-.260	.842

The current policy in force is unstable. It is likely to be changed, especially in response to pressures from the Reformers. The new Chinese policy on this issue is forecast to be at position "2" on the issue spectrum above, representing a large shift from its current location at position "4".

PS-6

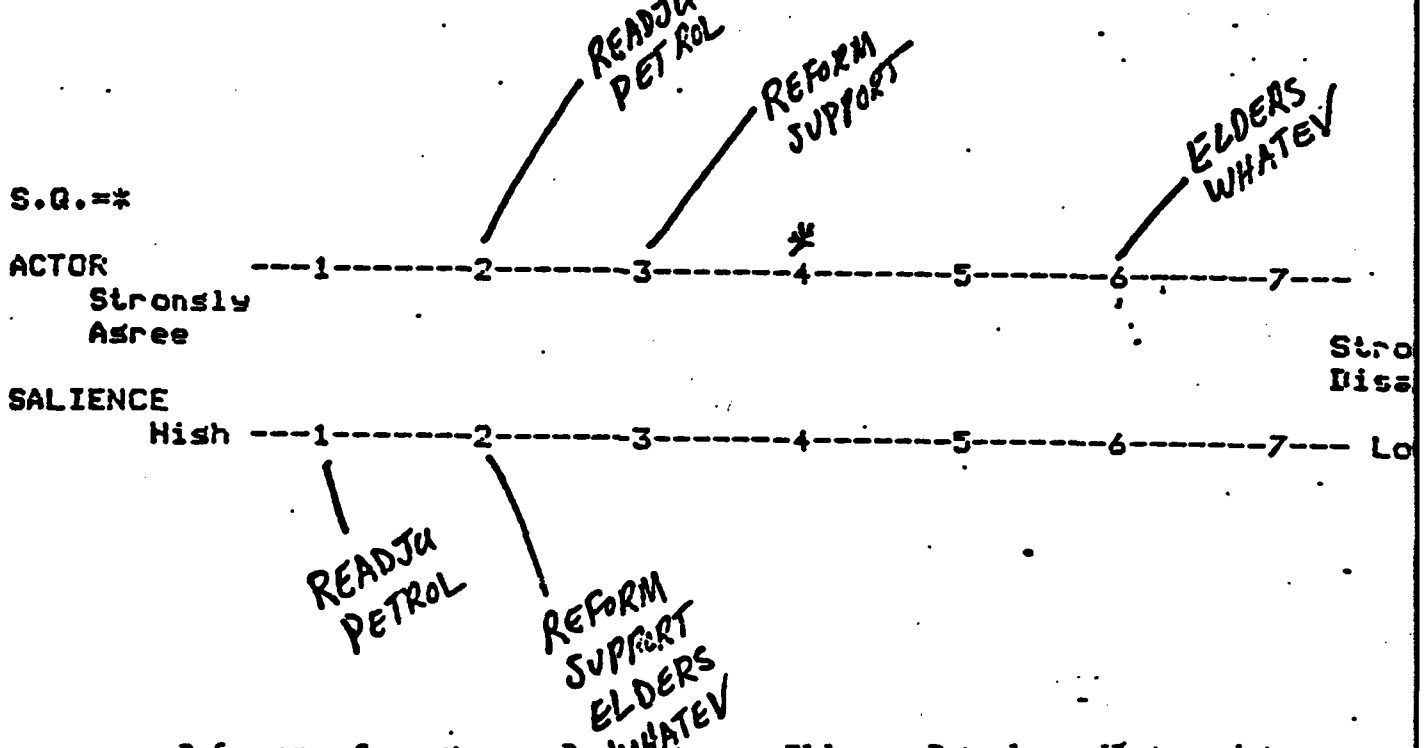
Issue Nr ---

Date 1 APR 1982

SUBJECT:

Analyst SEN

A five-year tenure period of all key positions should be established with a succeeding period depending upon performance.



	Reformers	Supporters	Readjusters	Elders	Petroleum	Whateverists
Risk Score	-.839	-.972	-.615	.632	-.651	.542

The current policy in force is unstable. It is likely to be changed, especially in response to pressures from the Reformers and Supporters. The new Chinese policy on this issue is forecast to be at location "3" on the issue spectrum.

PS-7

Issue Nr ---

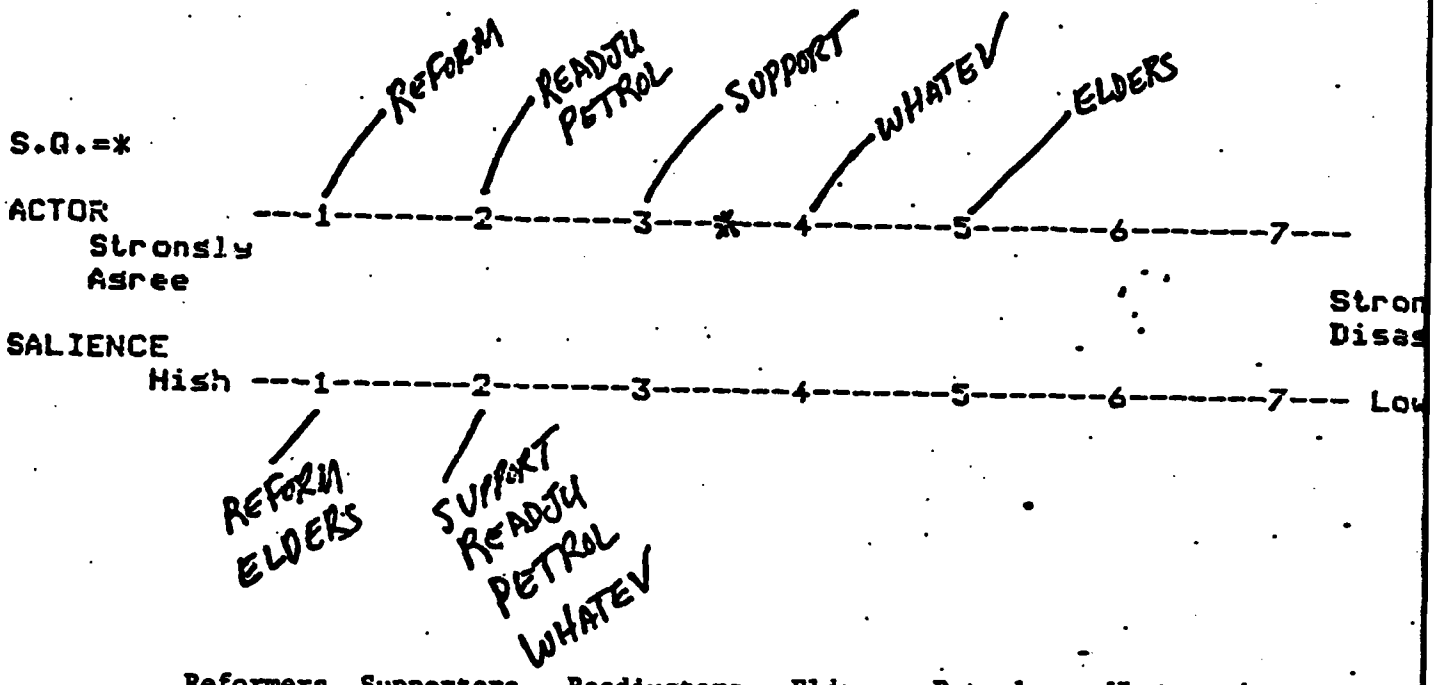
1 APR 1982

Date----------

SUBJECT:

Analyst--SEV-------

Veteran cadre of the Long March era should be mandatorily retired, if they fail to take advisory posts or voluntarily retire to make way for younger men.



	Reformers	Supporters	Readjusters	Elders	Petroleum	Whateverists
Risk Score	-.473	-.388	-1.000	.781	-1.000	.149

The current policy in force is unstable. The most stable location for the policy is position "2", which is preferred by the Readjusters and the Petroleum interest. The Petroleum group believes that they can shift the status quo to their preferred position. The Reformers and Supporters also believe they can move the status quo to their preferred positions ("1" and "3" respectively). The Supporters, however, are not prepared to take on either the Reformers or the Readjusters/Petroleum coalition. The Reformers, for their part, do not believe they can gain enough to warrant challenging the Readjusters/Petroleum coalition, while the leaders of that coalition do believe they can derive benefits by resisting demands by the Reformers. The upshot is a policy shift to "2".

PS-8

1 APR 1982

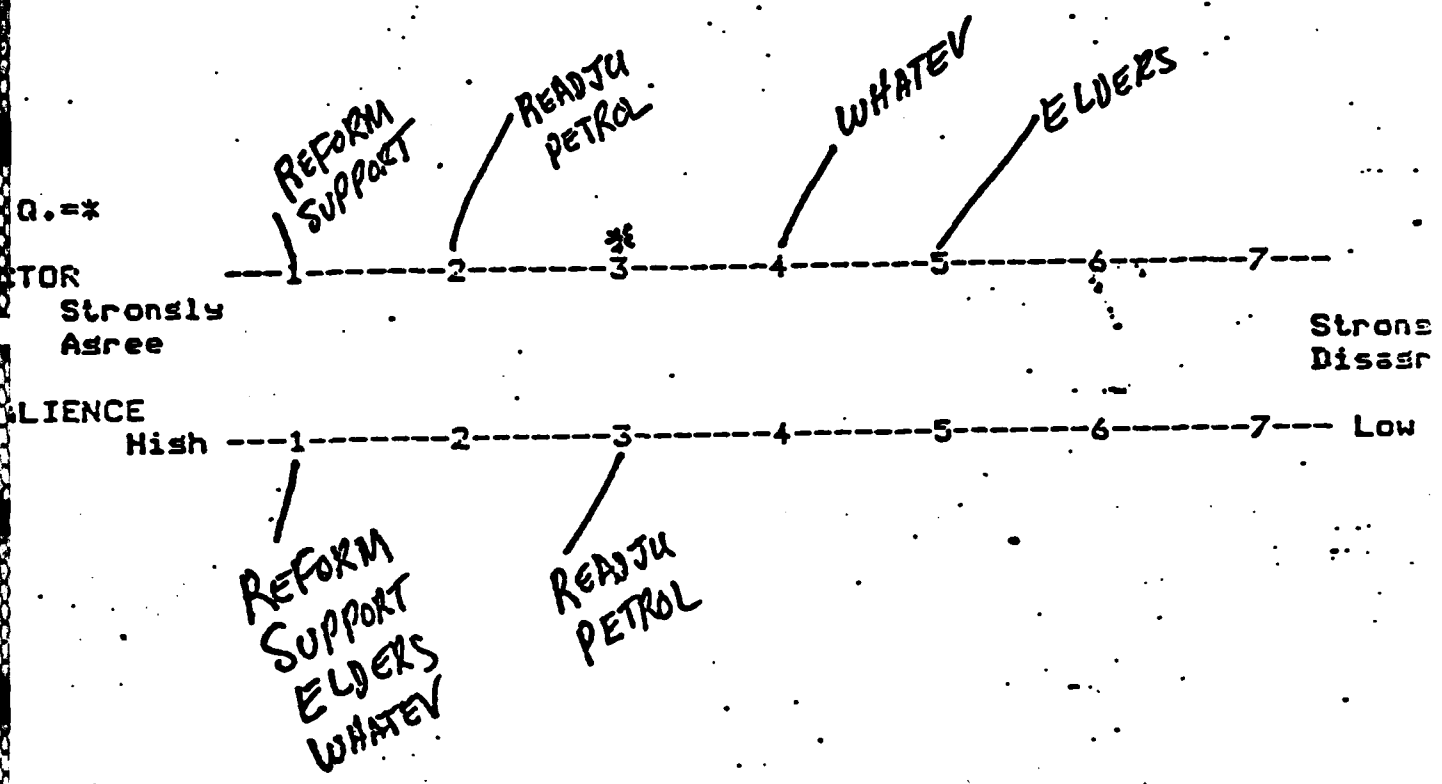
ue Nr ---

Date----------

Analyst--SEN

BJECT:

The Party should substantially increase the number of scientists, technicians, and intellecturals for cadre positions at the expense of peasants and workers in filling leadership posts.



	Reformers	Supporters	Readjusters	Elders	Petroleum	Whateverists
ore	-1.000	-.991	-.835	.761	-.878	.403

The current policy in force is unstable. The most stable position is at position "2" which represents the preference of the Petroleum group and the Readjusters. However, we do not forecast a shift to that position because the Reformers have a credible ability to defeat the Readjusters, the Petroleum group and the current status quo position. We forcast an outcome between the preference of the Reformers/Supporters and that of the Readjusters/Petroleum.

PS-10

1 APR 1992

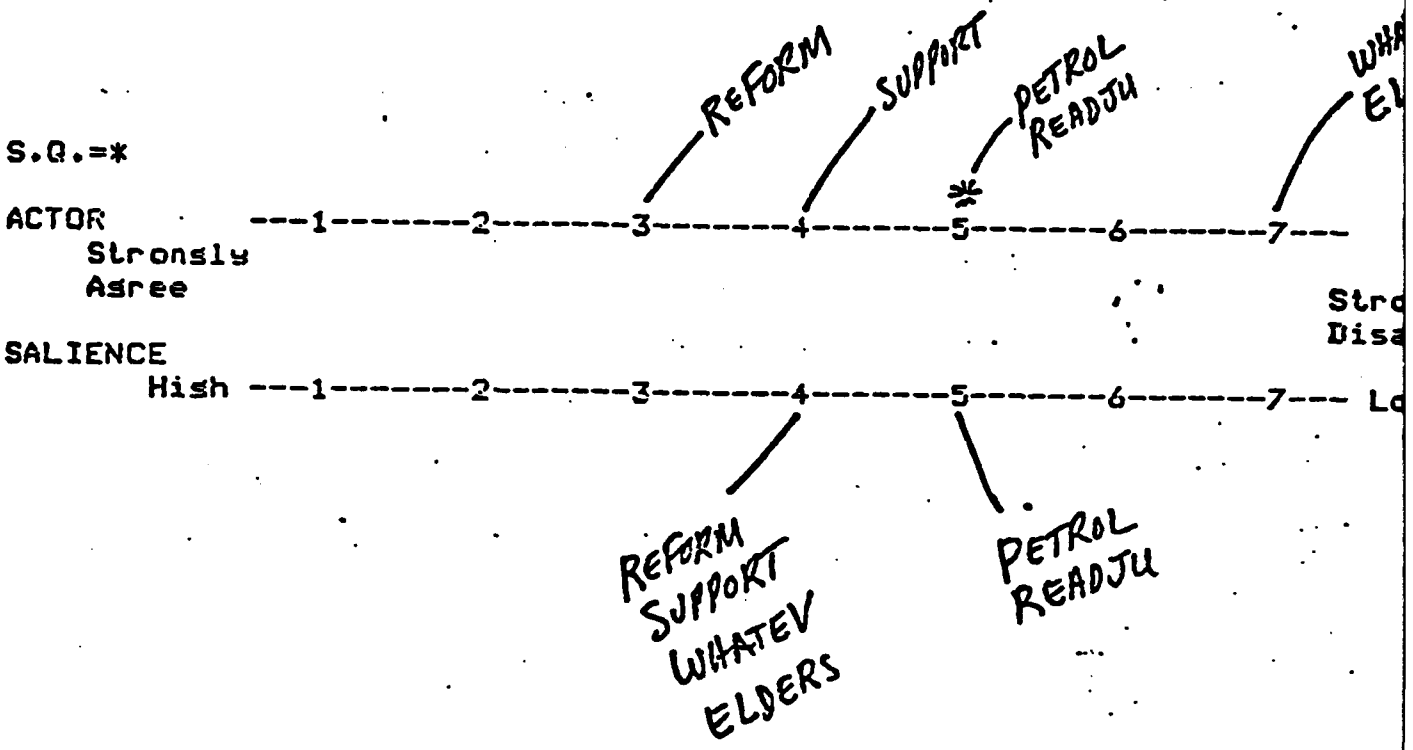
Issue Nr ---

Date----------

SUBJECT:

Analyst---SEN

Restrictions on artists, cultural circles, and media should be relaxed, as a more open and socialist democratic society will strengthen Party effectiveness.



	Reformers	Supporters	Readjusters	Elders	Petroleum	Whateverists
Risk Score	.124	-.572	-1.000	.484	-1.000	.345

All groups believe they can shift the status quo to an outcome closer to their own preference. The low salience of the issue makes it unlikely that anyone will be willing to engage in a big effort to alter policy on this issue. However, the dominant influence here is the Supporters. While everyone believes they can defeat the Supporters, the Supporters anticipate larger gains than anyone who might challenge them. The Supporters may expect a particularly large struggle with the Elders and the Whateverists on this issue, with the outcome shifting only slightly toward the Supporter's preference.

PS-11

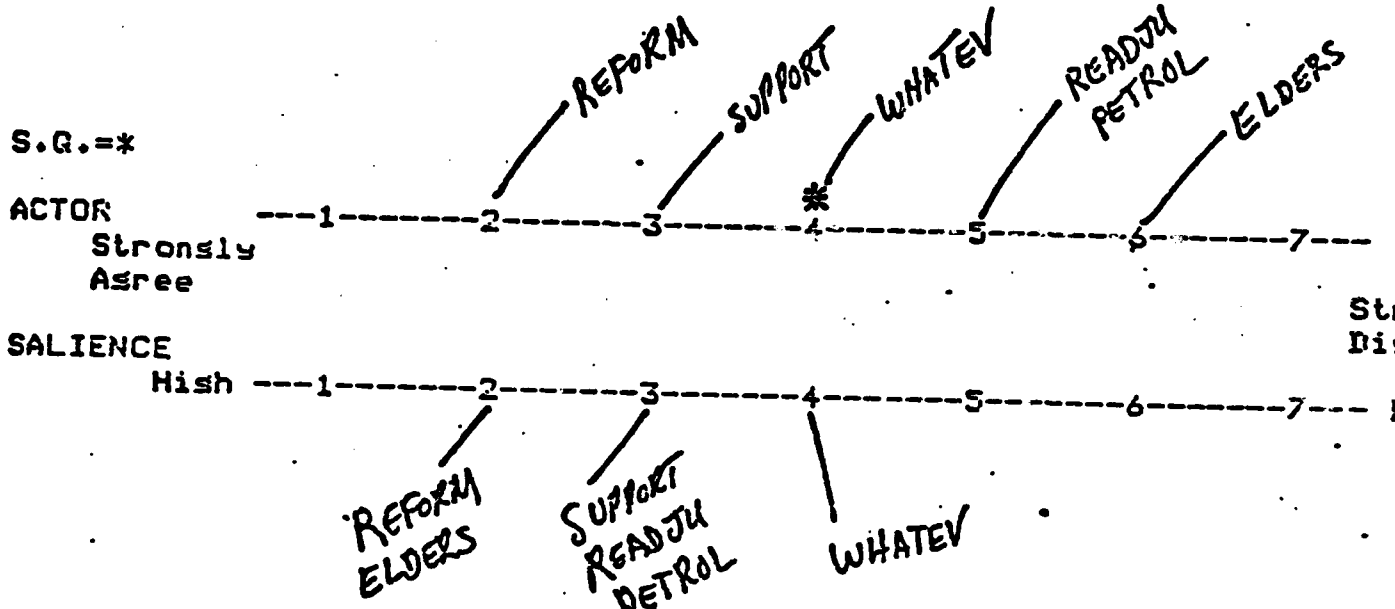
Issue Nr ---

1 APR 1982
Date----------

SUBJECT:

Analyst---SEN

In the socialist liberalization process, more provincial and local influence should be accepted in Beijing politics and policies.



	Reformers	Supporters	Readjusters	Elders	Petroleum	Whateverists
Risk Score	.449	-.260	-.329	.392	-.475	-.963

The current policy in force is not likely to change although it represents neither a consensus nor the preferred outcome of a dominant interest. Rather, the current policy represents a tenuous compromise between the Reformers -- who defeat all but the Supporters -- the Supporters -- who are vulnerable in a very close struggle with the Elders to defeat by the Elders -- and the Elders -- who are vulnerable to the Reformers -- so that there are contending forces that exert countervailing forces that leave the status quo at its current position. Small changes in any group's score on any of the variables could produce a change in the status quo.

PS-12

Issue Nr ---

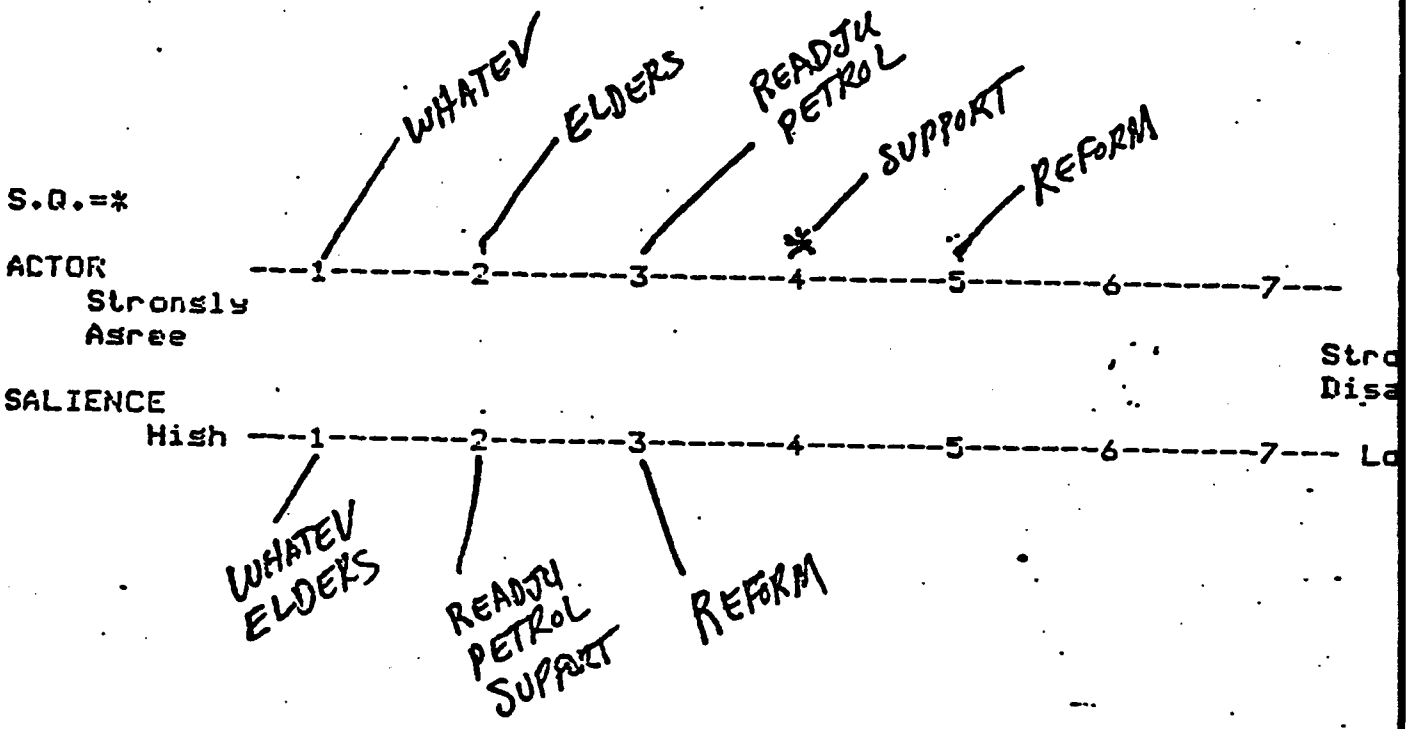
1 APR 1982

Date----------

SUBJECT:

Analyst--SEN---

China should become modernized but not westernized, preserving traditional Chinese social values that are being threatened.



	Reformers	Supporters	Readjusters	Elders	Petroleum	Whateverists
Risk Score	.476	-.219	-1.000	-.121	-1.000	.206

The current policy in force is unstable. It is likely to be changed, especially in response to pressures from the Readjusters/Petroleum coalition. The Reformers -- who do not view this as a very important issue -- may put up some resistance. The Reformers believe they can defeat the Readjusters and Petroleum group. However, in a close contest, it is likely that the Readjusters would emerge successful against the Reformers. Furthermore, the Reformers do not believe they can alter the status quo, while the Readjusters and Petroleum group believe they can. The new Chinese policy on this issue, therefore, is forecast to be at position "3" on the issue spectrum.

PS-13 1 APR 1982

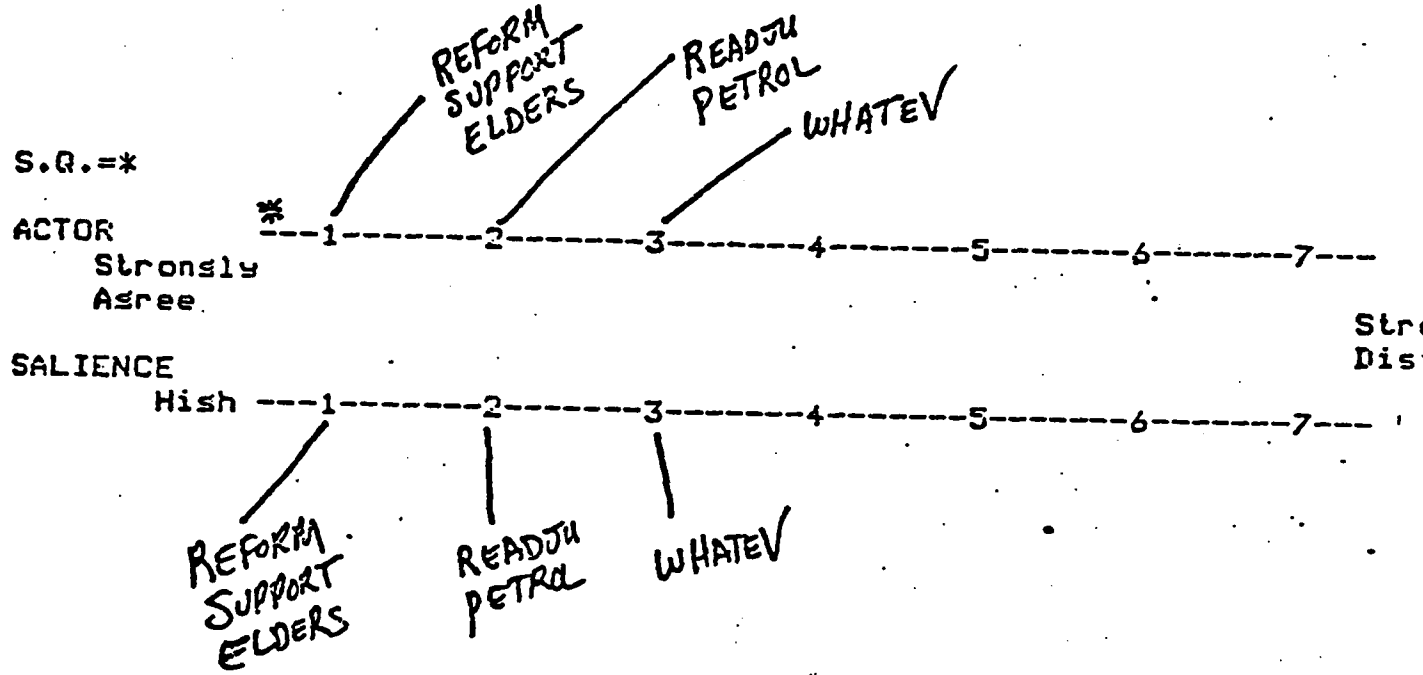
Issue Nr ---

Date----------

SUBJECT:

Analyst---SEN---

In view of the "Polish situation," the Party must take the steps necessary to ensure that the CCP remains in power and is not threatened by any thoughts of liberalism or democracy.



	Reformers	Supporters	Readjusters	Elders	Petroleum	Whateverists
Risk Score	-.894	-1.000	-.077	-1.000	-.152	.470

The current policyin force is unstable. It is likely to be changed, especially in response to pressures from the Reformers/Supporters/Elders. The new Chinese policy on this issue is forecast to be at position "1" on the issue spectrum, representing a modest change in policy.

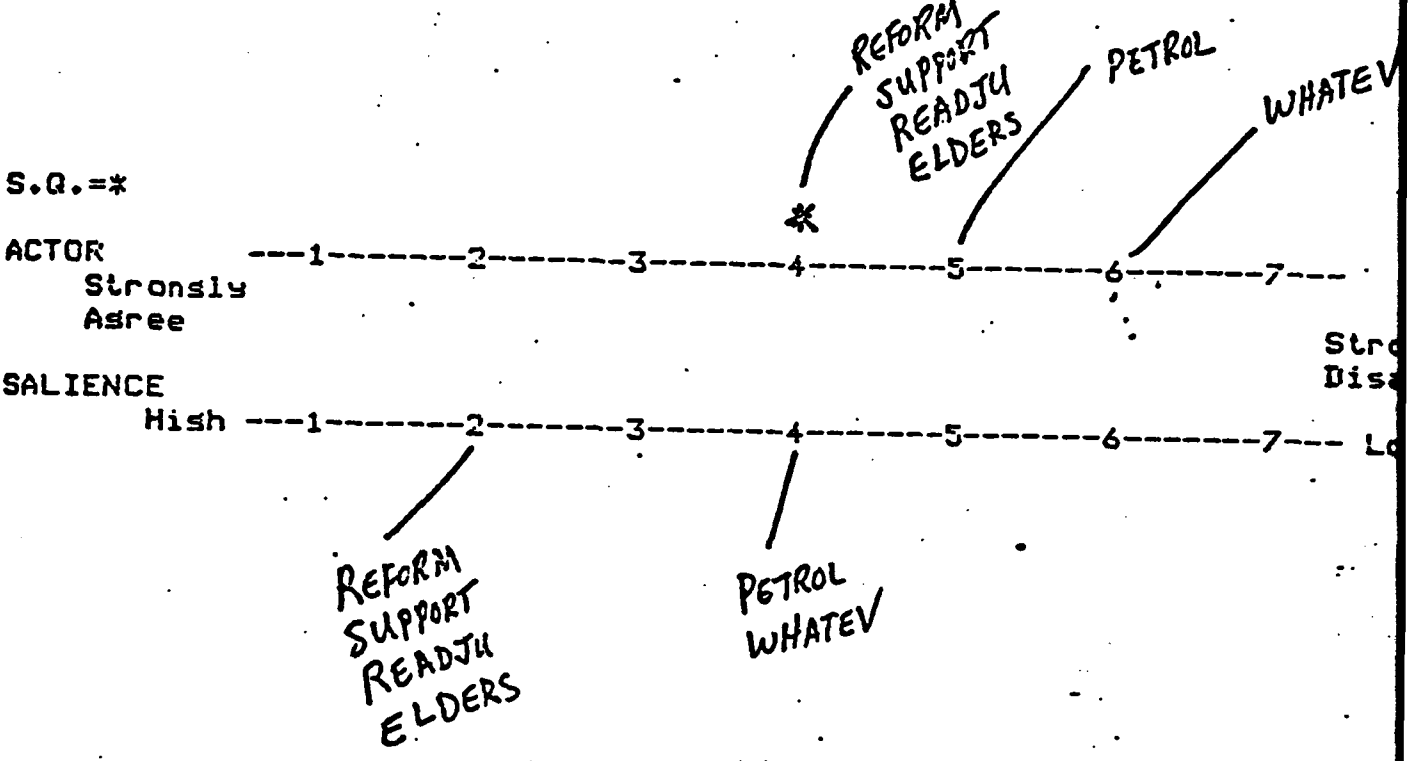
Issue Nr PS-14

1 APR 1982
Date

SUBJECT:

Analyst SEN

In modernization China should stress being both "red" and "expert."



	Reformers	Supporters	Readjusters	Elders	Petroleum	Whateverists
Risk Score	-1.000	-1.000	-1.000	-1.000	.248	.790

The current policy in force is not susceptible to change by any group so long as all resources are marshaled to resolve debate over this issue.

PS-15

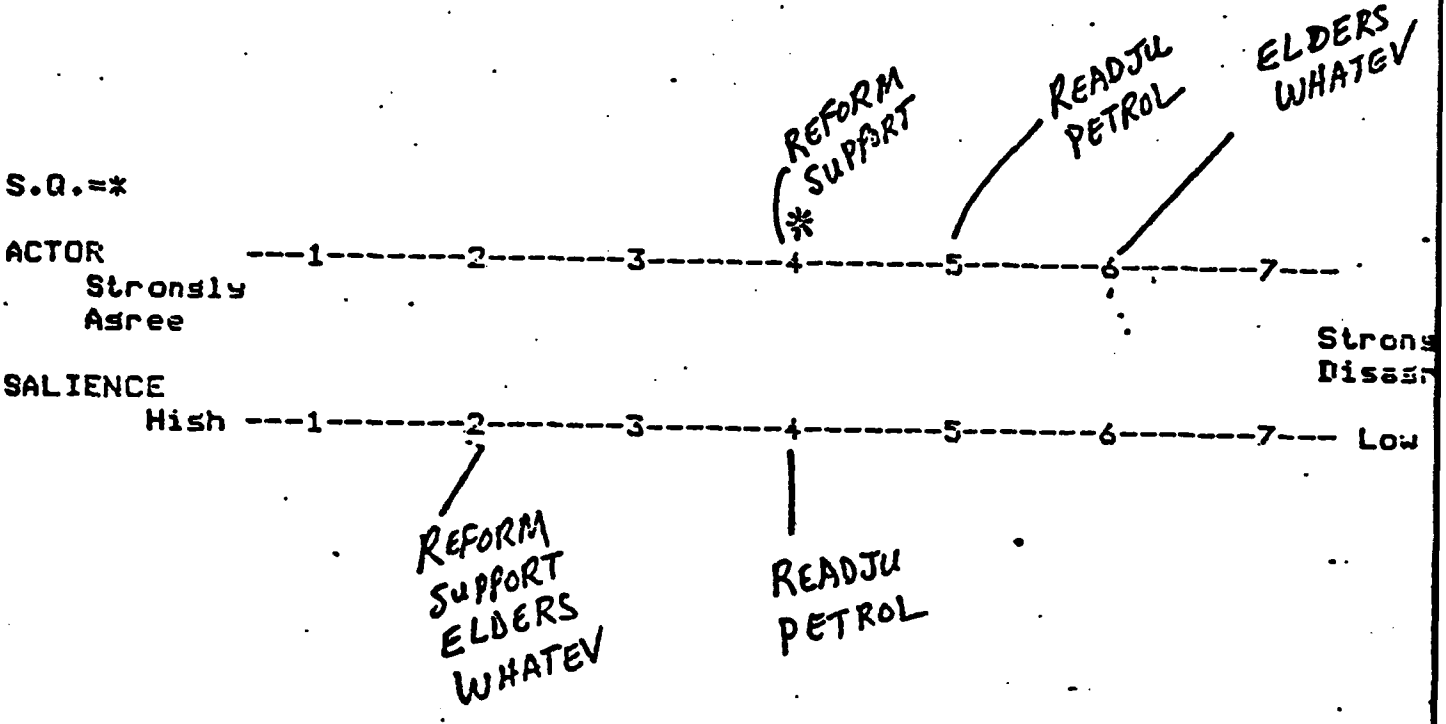
Issue #: ---

Date 1 APR 1982

SUBJECT:

Analyst SEN

A new "spiritual civilization" should be built in China.



	Reformers	Supporters	Readjusters	Elders	Petroleum	Whateverists
Risk Score	-.136	-.302	-.772	.263	-.862	.021

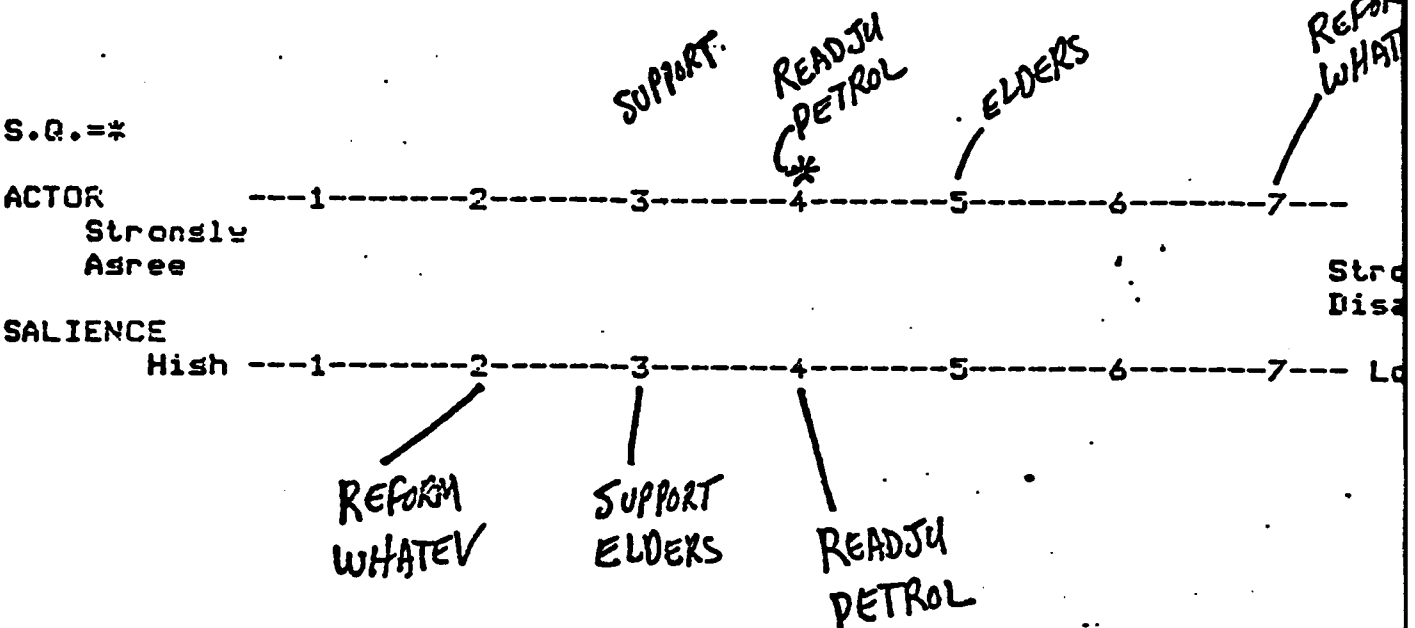
The current policy in force is not susceptible to change, although the position that minimizes efforts to alter the policy is at the preferred outcome of the Readjusters and Petroleum group. This outcome is not expected, however, because the dominant interest on this issue is that of the Reformers. They cannot be defeated by any group. The status quo is not expected to change so long as all resources are marshaled to resolve debate over this issue and so long as preferences, salience, and resources do not change.

1 APR 1982

Issue Nr FP-1 Date----------

SUBJECT: Analyst--SEJ

Neither Washington nor Moscow is reliable. China should therefore treat both evenhandedly.



	Reformers	Supporters	Readjusters	Elders	petroleum	Whateverists
Risk-Score	.284	.476	-.644	-.983	-.683	-.239

The current policy in force is unstable. It is likely to be changed, especially in response to pressure from the Reformers and Whateverists. The optimal position in terms of minimizing counterthreats on this issue is at the policy position supported by the Elders. However that position can be defeated by the Reformers. The Supporters believe --mistakenly -- that they can defeat the Reformers/Whateverists on this policy. Their struggle with the Whateverists would be very close, except that the Reformers strongly dominate the Supporters. The outcome that is forecast, therefore, is for a substantial policy change reaching almost to the "Strongly Disagree" outcome desired by the Reformers and Whateverists. Should this issue become more salient to the Supporters or the Elders the forecast outcome would become unstable. Further analysis would be required to pinpoint the implications of such a change in salience.

1 APR 1982

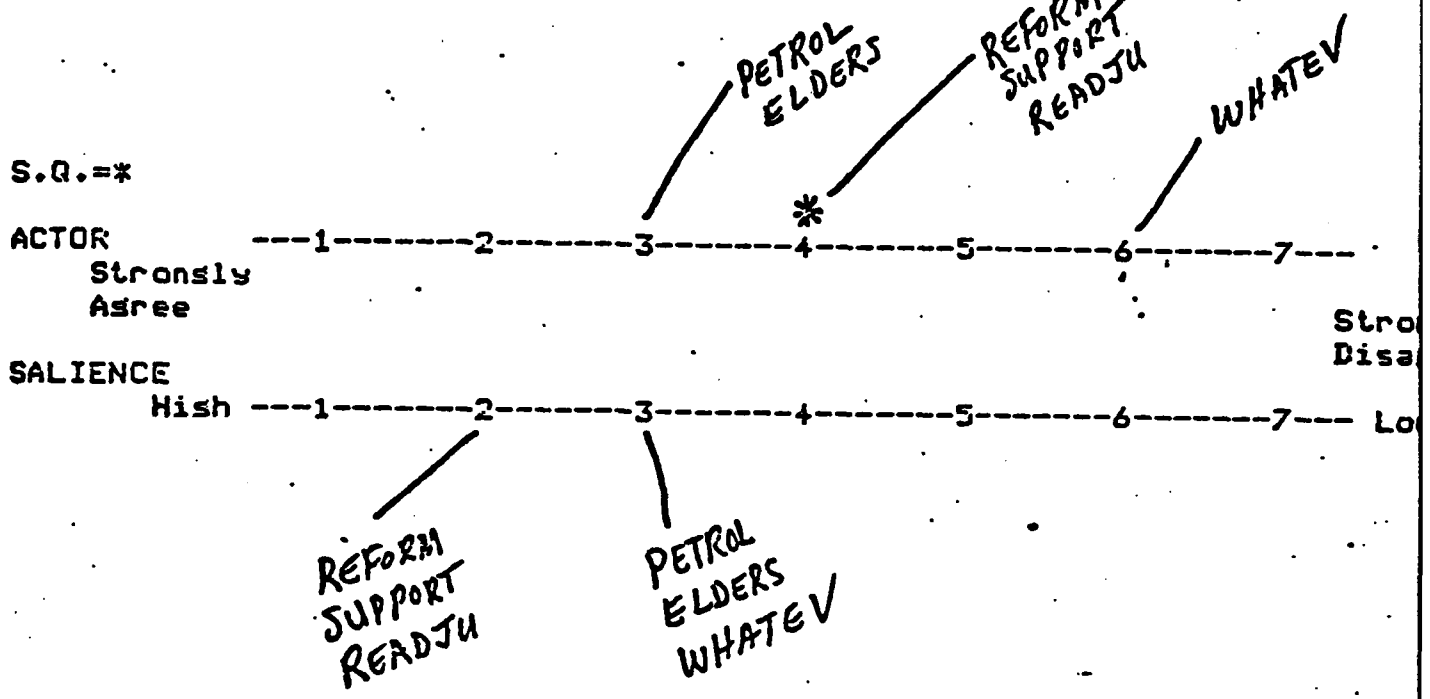
Issue Nr FP-2

Date----------

SUBJECT:

Analyst SEN

China should develop an American relationship based on friendship, rather than on military alliance or quasi-alliance.



	Reformers	Supporters	Readjusters	Elders	Petroleum	Whateverists
Risk-Score	-1.000	-1.000	-1.000	.114	.114	.356

The current policy in force is not susceptible to change by any group given that all resources are marshaled to resolve debate over this issue..

FP-3

Issue Nr ---

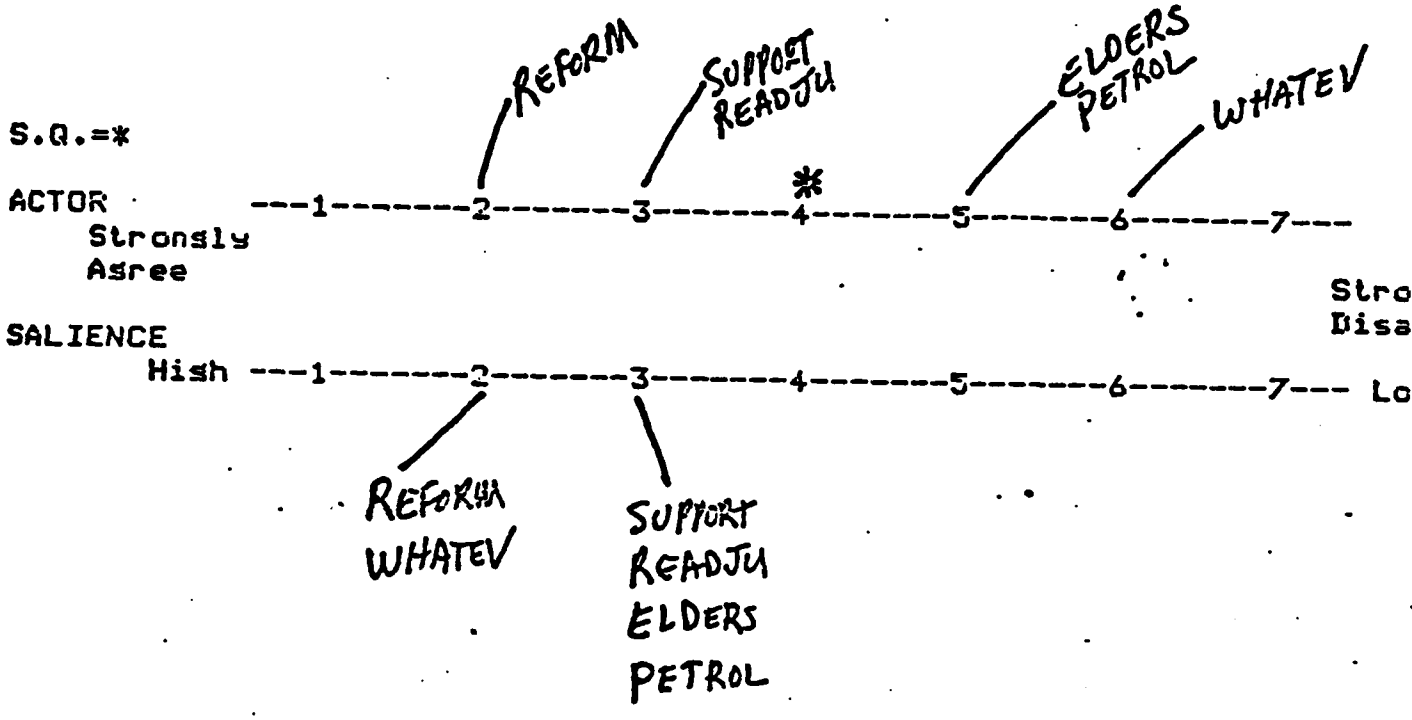
1 APR 1982

Date----------

SUBJECT:

Analyst--SEV-----

China's military weakness and limited resources leave it little choice except to pursue a close relationship with the US--political, economic, and military as well as cultural.



	Reformers	Supporters	Readjusters	Elders	Petroleum	Whateverists
Risk-Score	-.460	-1.000	-1.000	.057	.057	.510

The current policy in force is unstable. It is likely to be changed, especially in response to pressure from the Supporters and Readjusters. These two groups, however, do not believe they can defeat the interests of the Elders and Petroleum group. Consequently, the Supporters and Readjusters are likely to proceed cautiously. The forecast outcome, therefore, will fall in the range of location 3 to location 3.8 on the issue spectrum.

FP-4

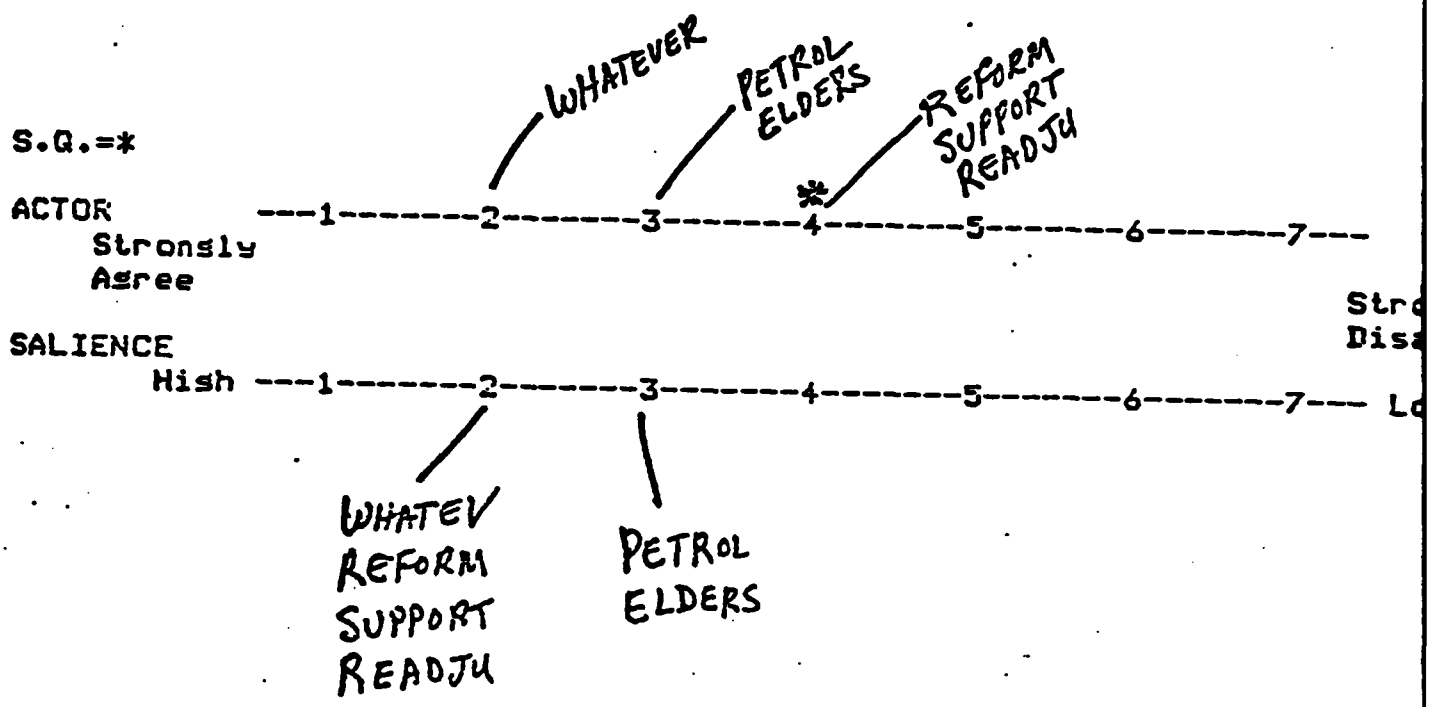
Issue Nr ---

Date 1 APR 1982

SUBJECT:

Analyst SEN

Beijing should reduce relationships with Washington, if the US will not provide a termination date for arms sales or resupply to Taiwan. Economic and technical cooperation, however, should not be initially affected.



	Reformers	Supporters	Readjusters	Elders	Petroleum	Whateverists
Risk-Score	-1.000	-1.000	-1.000	-.137	-.137	.619

The current-policy in force is not susceptible to change by any group given that all resources are marshaled to resolve debate over this issue.

FP-6

Issue Nr ---

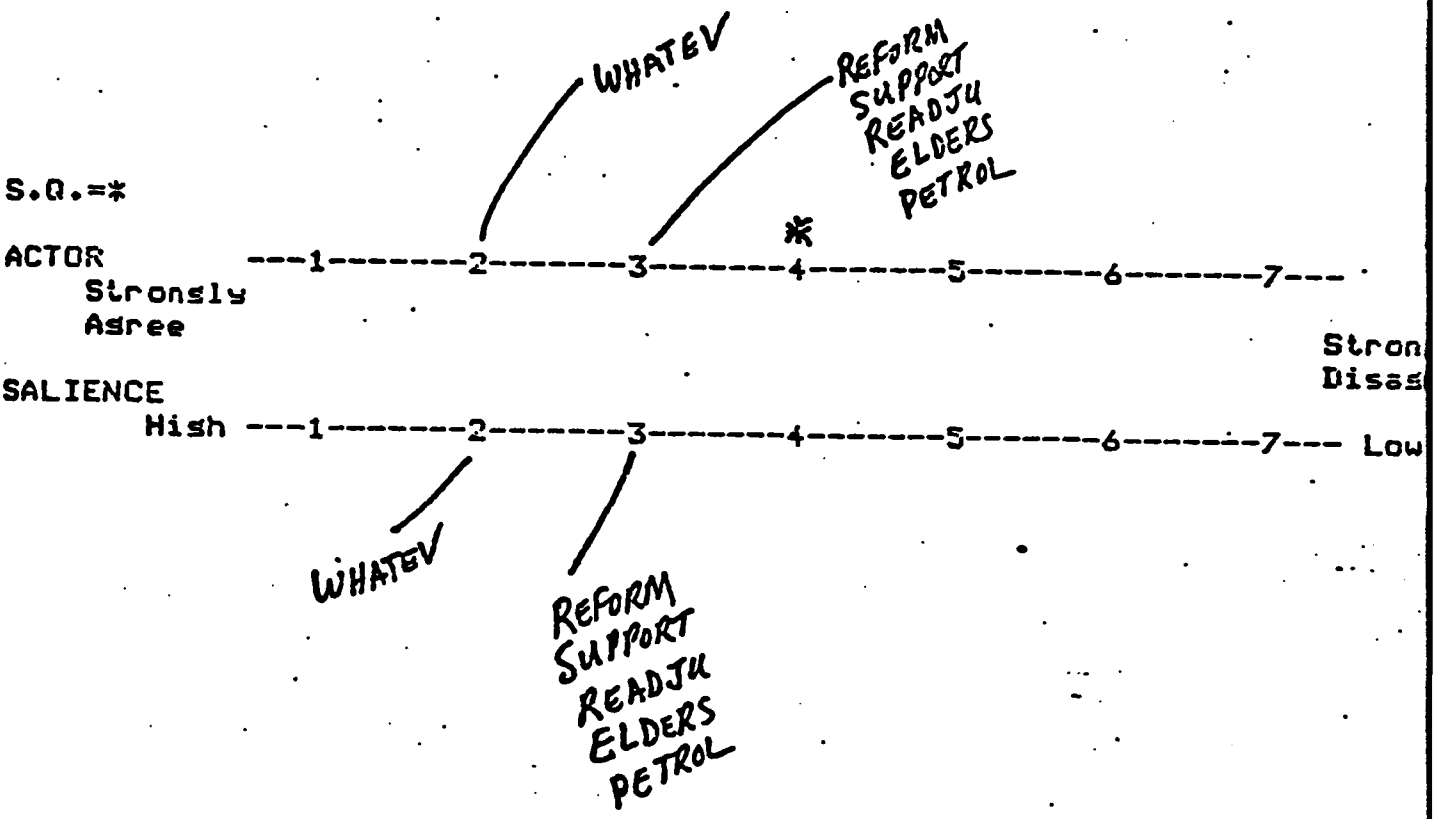
1 Apr 1982

Date----------

SUBJECT:

Analyst--SEN---

There should be an initiation of low-level military pressure against Taiwan--if Taiwan were to develop a nuclear weapon, declare independe seek the protection of the USSR, or fail over a period of time to respond to peaceful overtures for reunification.



	Reformers	Supporters	Readjusters	Elders	Petroleum	Whateverists
Risk SCore	-1.000	-1.000	-1.000	-1.000	-1.000	.064

The current policy in force is unstable. It is likely to be changed, especially in response to the overwhelming preference to have the outcome be at position "3" on the issue spectrum. This is the outcome that is forecast.

FP-7

1 APR 1982

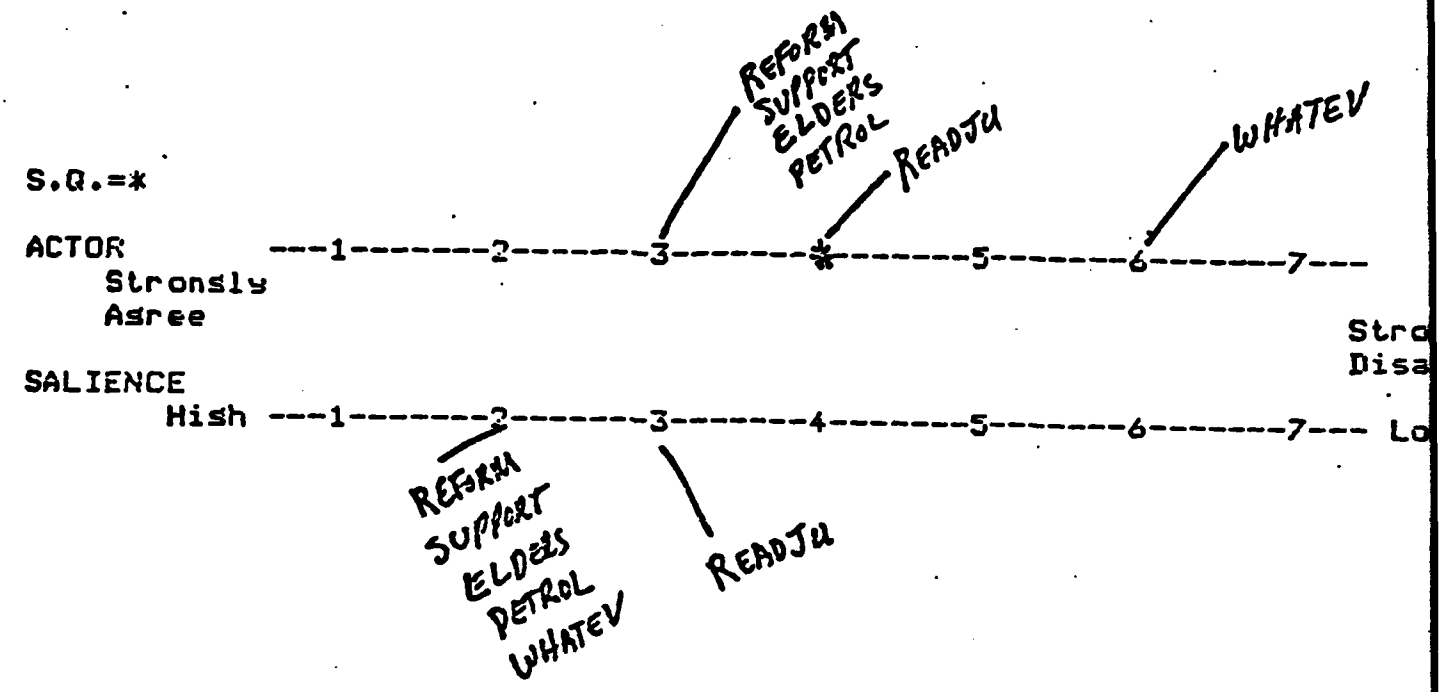
Issue Nr ---

Date----------

SUBJECT:

Analyst--SEN--

China should begin to move toward a limited accommodation with the USSR, especially if the US were to fail to show resolve and backs down in facing Soviet aggressive moves.



	Reformers	Supporters	Readjusters	Elders	Petroleum	Whateverists
Risk Score	-1.000	-1.000	-.061	-1.000	-1.000	1.000

The current policy in force is unstable. It is likely to change in response to pressure from the Reformers/Supporters/Elders/Petroleum groups. The new Chinese policy is forecast to be at position "3".

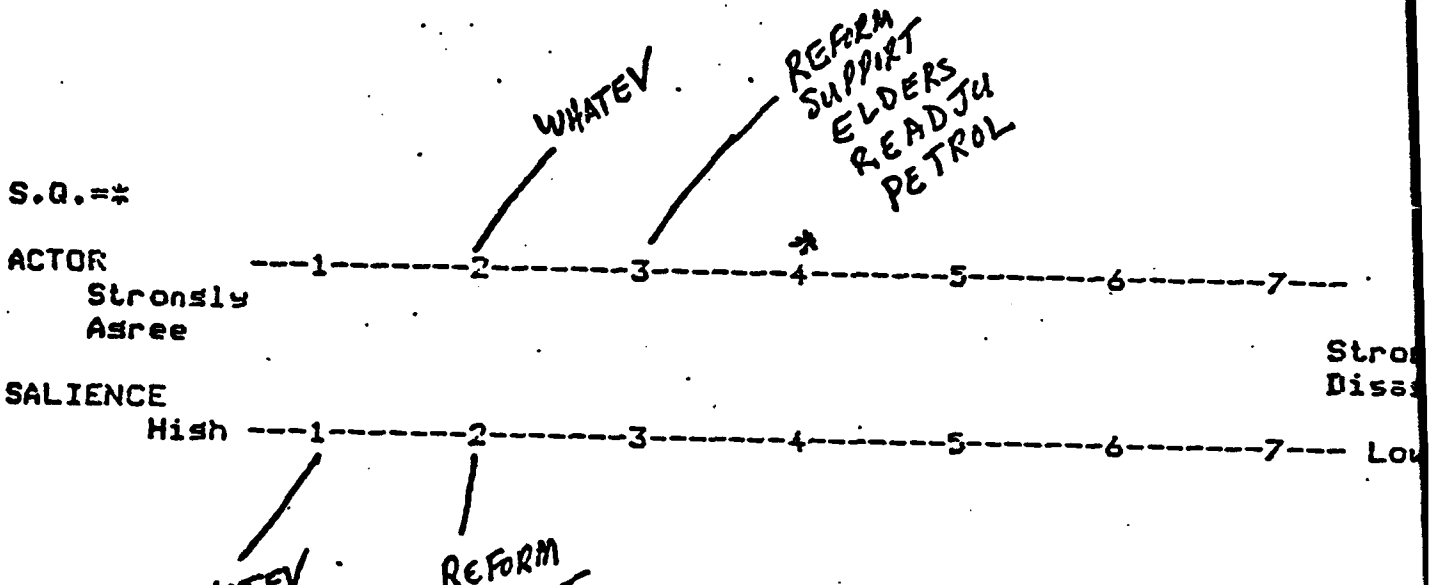
Issue Nr FP-8

1 Apr 1982
Date----------

SUBJECT:

Analyst--SEN--

China should begin to move toward a limited accommodation with the USSR, if SALT and other negotiations show a US-Soviet predisposition to work against Chinese interests.



	Reformers	Supporters	Readjusters	Elders	Petroleum	Whateverists
Risk Score	-1.000	-1.000	-1.000	-1.000	-1.000	.062

The current policy in force is unstable. It is likely to be changed, especially in response to pressures from the overwhelmingly dominant coalition that prefers outcome "3". The new Chinese policy is forecast to be a position "3".

FP-9

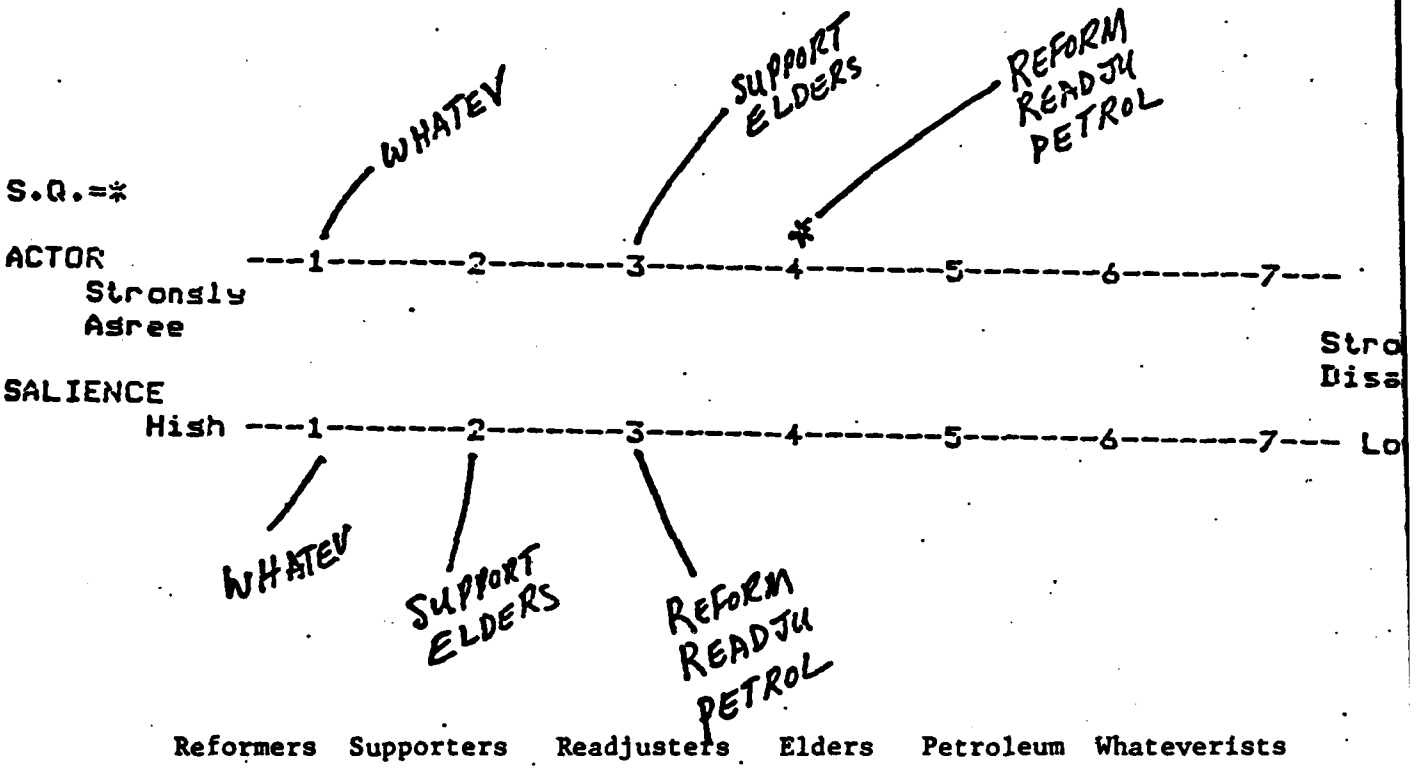
Issue Nr ---

Date 1 APR 1982

SUBJECT:

Analyst SEN

China should rebuff all Soviet attempts to improve relations, except to relieve border tensions.



	Reformers	Supporters	Readjusters	Elders	Petroleum	Whateverists
Risk-Score	-.402	-.584	-.656	-.706	-.713	1.000

The current policy in force is vulnerable to change by the Supporters and Elders, with the most stable policy choice being at their preferred outcome. That outcome is most stable in the sense that it would provoke the fewest credible challenges. However, we do not forecast a shift to that most stable position because the Reformers have a credible counterthreat to the Supporters/Elders. The Reformers' preferred outcome is the current status quo. Although that position is tenuous; barring any changes in resources, preferences, or salience, the current policy will continue. It should, however, be noted that the Reformers do not consider this as important an issue as do the Supporters and Elders. Further analysis would be required to ascertain whether there is the likelihood of an issue trade involving this question.

FP-10

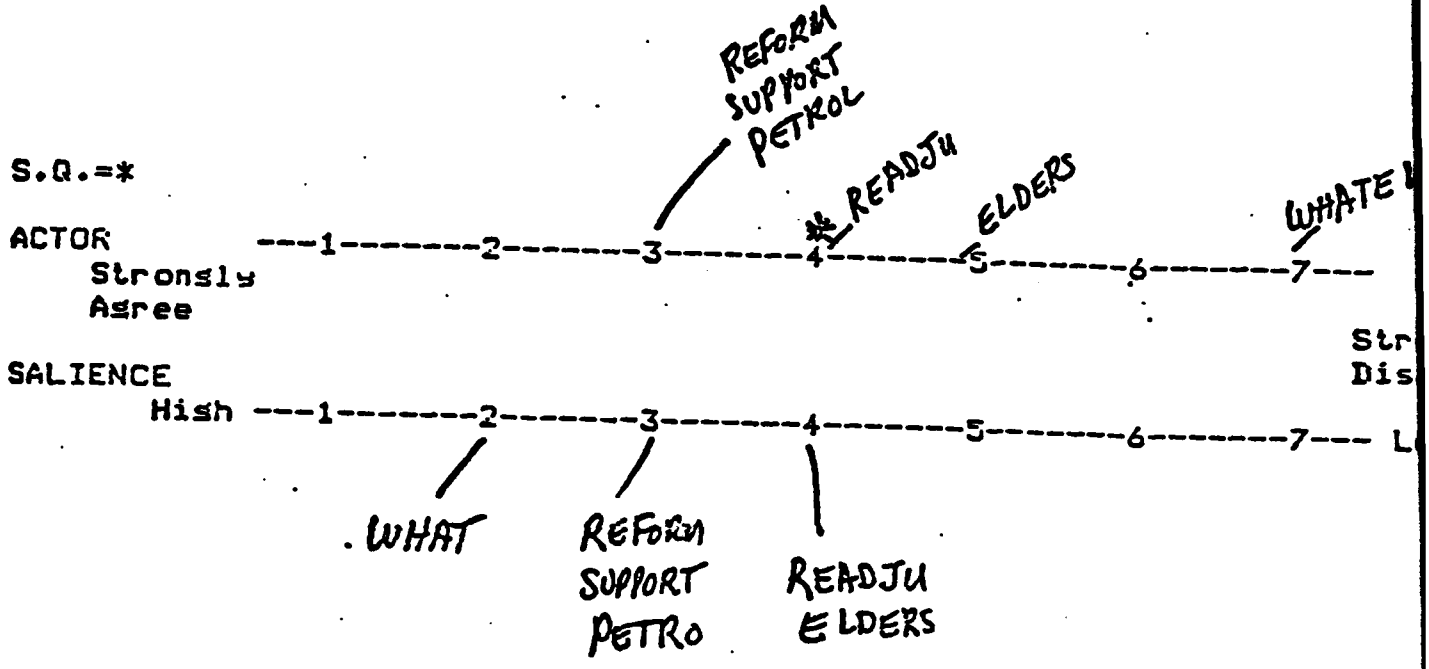
Issue Nr ---

1 APR 1982
Date----------

SUBJECT:

Analyst--SEN---

China should maintain its basic anti-Soviet orientation. Overtures should be made to Moscow upon a change of sucessors in the USSR.



	Reformers	Supporters	Readjusters	Elders	Petroleum	Whateverists
Risk-Score	-1.000	-1.000	-.534	.046	-1.000	.894

The current policy in force is unstable. It is likely to be changed, especially in response to pressure from the Reformers, Supporters and Petroleum interests. However, a shift in policy will be accompanied by a significant struggle between the winning coalition and the Whateverists. The Whateverists can defeat the Petroleum interest on this issue, although they will fail in their struggle with the Supporters and Reformers. Even this struggle, however, is likely to be very close. The policy will shift slightly toward the winning coalition.

FP-11

Issue Nr ---

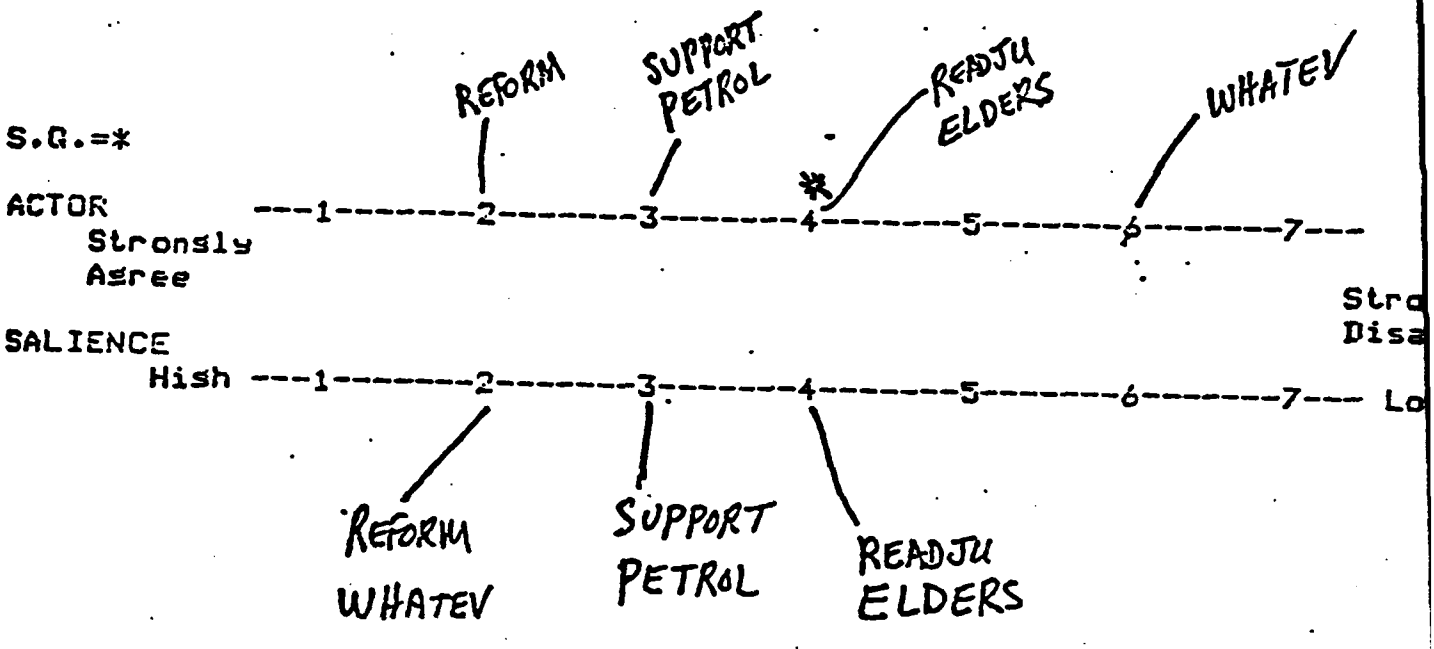
1 APR 1982

Date----------

SUBJECT:

Analyst--SEN----

A hostile attitude toward the USSR is not in China's best interest. Given the compatibility of Soviet weapons systems, past S&T training by the Soviets, acquisition of Soviet hardware would upgrade China's military capability. Probings in this directi should be undertaken, if the opening to the West proves to be unfru in rearming China.



	Reformers	Supporters	Readjusters	Elders	Petroleum	Whateverists
Risk-Score	-.348	-1.000	-.377	-.425	-1.000	.925

The current policy in force is unstable. It is likely to be changed, especially in response to pressure from the Supporters and the Petroleum group. The new Chinese policy on this issue is forecast to be at issue position "3".

FP-12 1 APR 1982

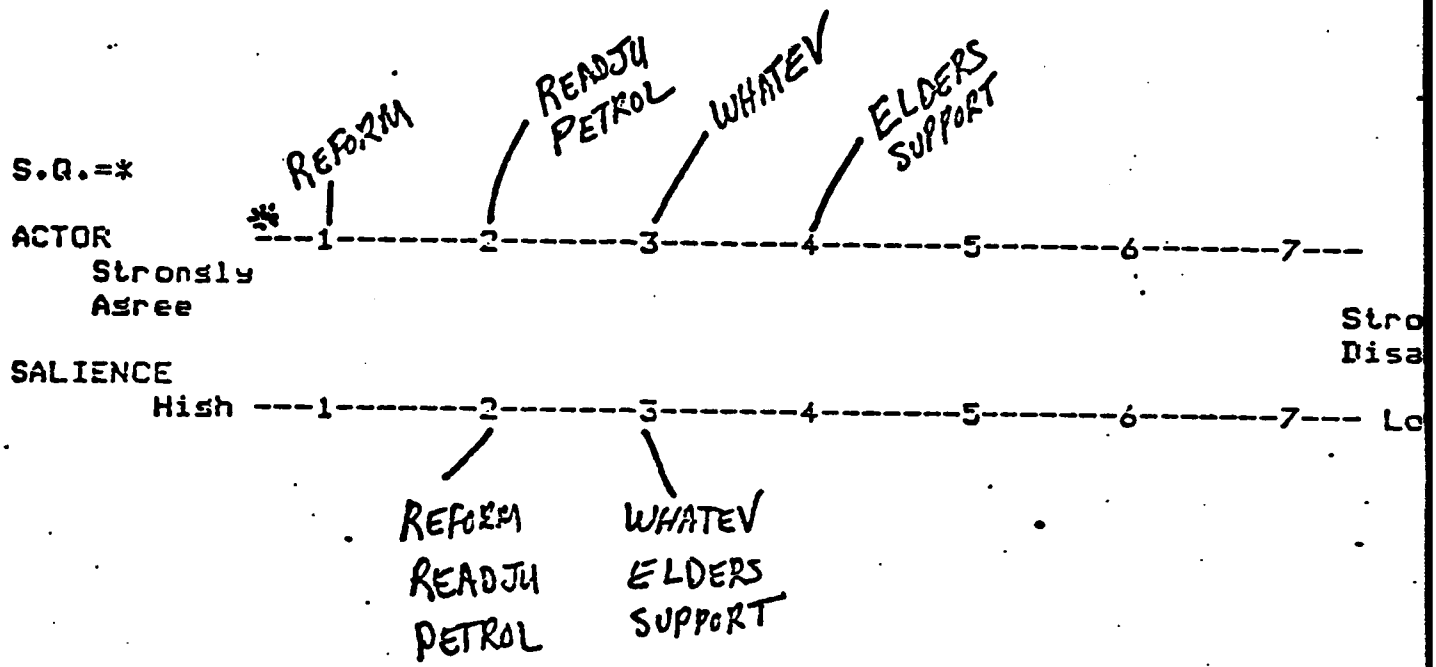
Issue Nr ---

Date----------

SUBJECT:

Analyst--SEN---

Given the importance of the 4 modernizations, there should be an avoidance of renewed border hostilities with either the USSR or Vietnam.



	Reformers	Supporters	Readjusters	Elders	Petroleum	Whateverists
Risk-Score	.304	.355	-.984	.246	-1.000	.435

The current policy in force is unstable. It is likely to be changed, especially in response to pressure from the Readjusters/Petroleum coalition on the one hand and the Supporters/Elders coalition on the other hand. The optimal outcome -- in terms of minimizing counterthreats -- on this issue is the position desired by the Readjusters and Petroleum interests. However, this position can be defeated by the Supporters/Elders. They in turn defeat all except the Reformers and the Whateverists. A cycle of struggles unfolds in which the Reformers can defeat the Whateverists and the Supporters -- the forces pulling the outcome strongly toward the "Disagree" end of the issue spectrum -- while the Reformers are defeated by those pulling the issue only modestly toward "Disagree." But these moderate forces, in turn, can be defeated by those who hold a more extreme position. The forecast outcome is between position "2" and "2.5".

FP-13

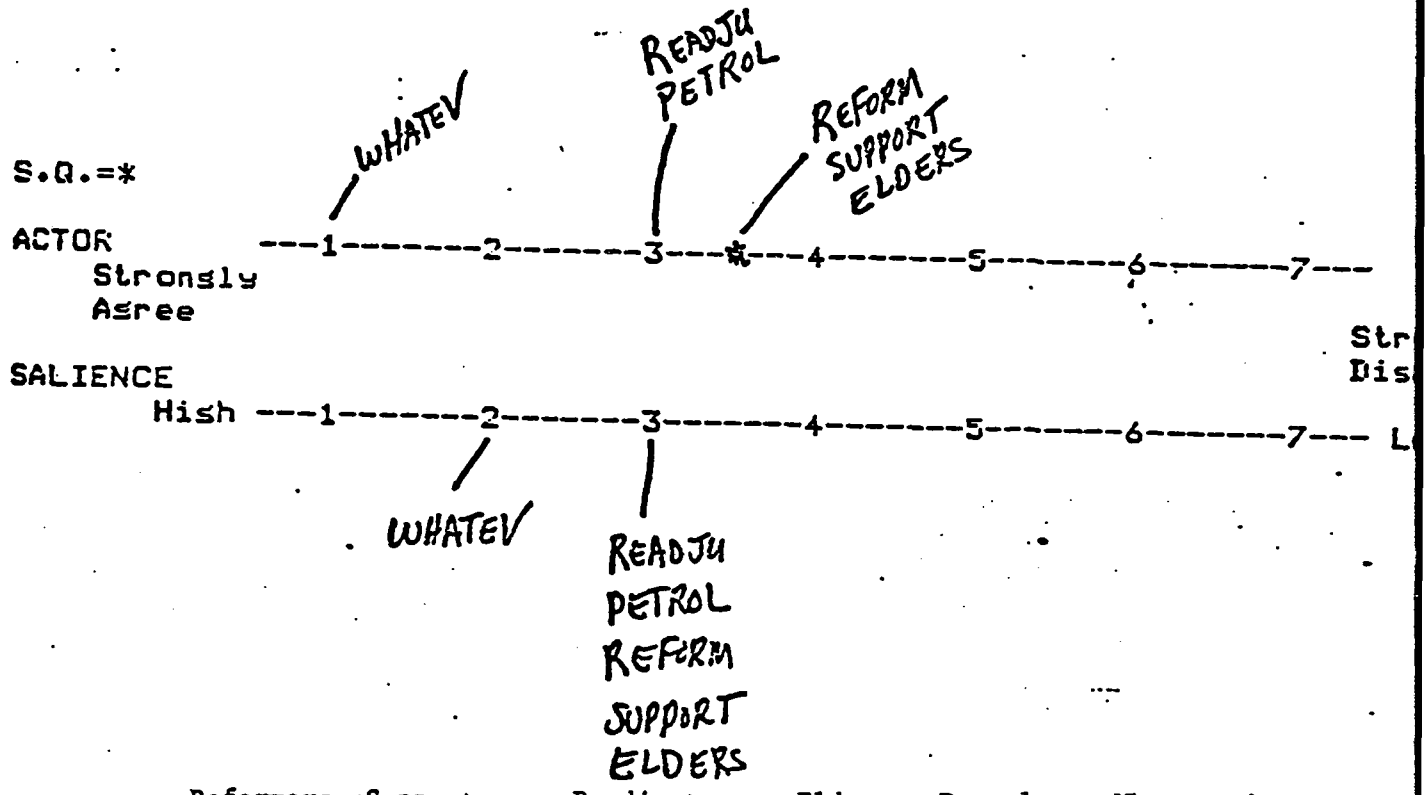
Issue Nr ---

Date 1 APR 1982

SUBJECT:

Analyst SEN

PRC foreign policy should remain fixed toward support of the LDCs, despite strategic-economic links with the US.



	Reformers	Supporters	Readjusters	Elders	Petroleum	Whateverists
Risk-Score	-.688	-.879	-.450	-.958	-.517	1.000

The current policy in force is not susceptible to change by any group given that all resources are marshaled to resolve debate over this issue. Although the Reformers dominate on this issue, the Whateverists believe they can gain by trying to alter the status quo. Consequently, some struggle between the Reformers coalition and the Whateverists is likely. The forecast on the issue, however, is for no change.

FP-14

Issue Nr ---

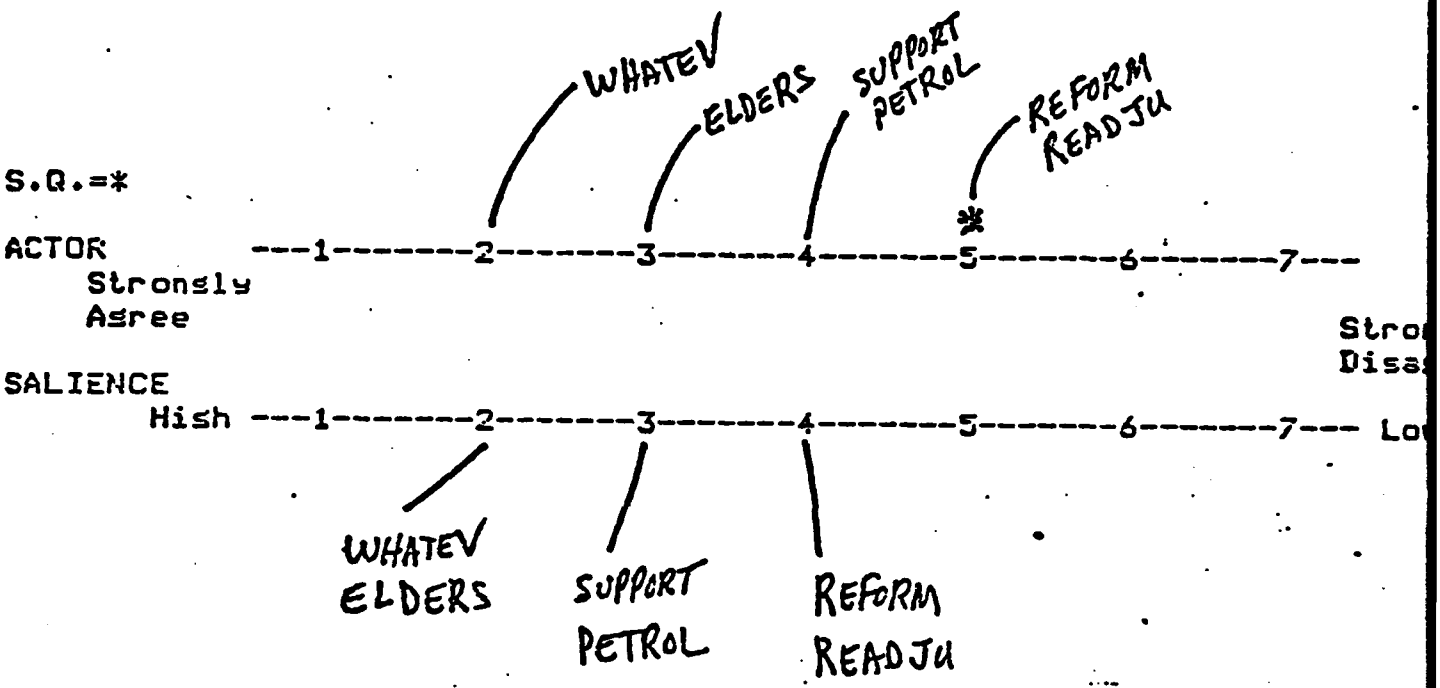
1 APR 1982

Date----------

SUBJECT:

Analyst---SEN---

China should uphold proletarian internationalism by supporting "liberation of oppressed nations and the just struggle of people's everywhere (insurgency)."



	Reformers	Supporters	Readjusters	Elders	Petroleum	Whateverists
Risk-Score	.053	-1.000	.110	.025	-1.000	.423

The current policy in force is unstable. It is likely to be changed, especially in response to pressure from the coalition of Supporters and Petroleum interests. The new Chinese policy on this issue is forecast to be located at position "4" on the issue spectrum, although it will not result without some modest struggle by the Reformers. Should the Reformers find this issue to be more salient in the future, then a significant struggle could result. Further analysis would be required to estimate likely changes if the issue becomes more salient.

Issue Nr FP-15

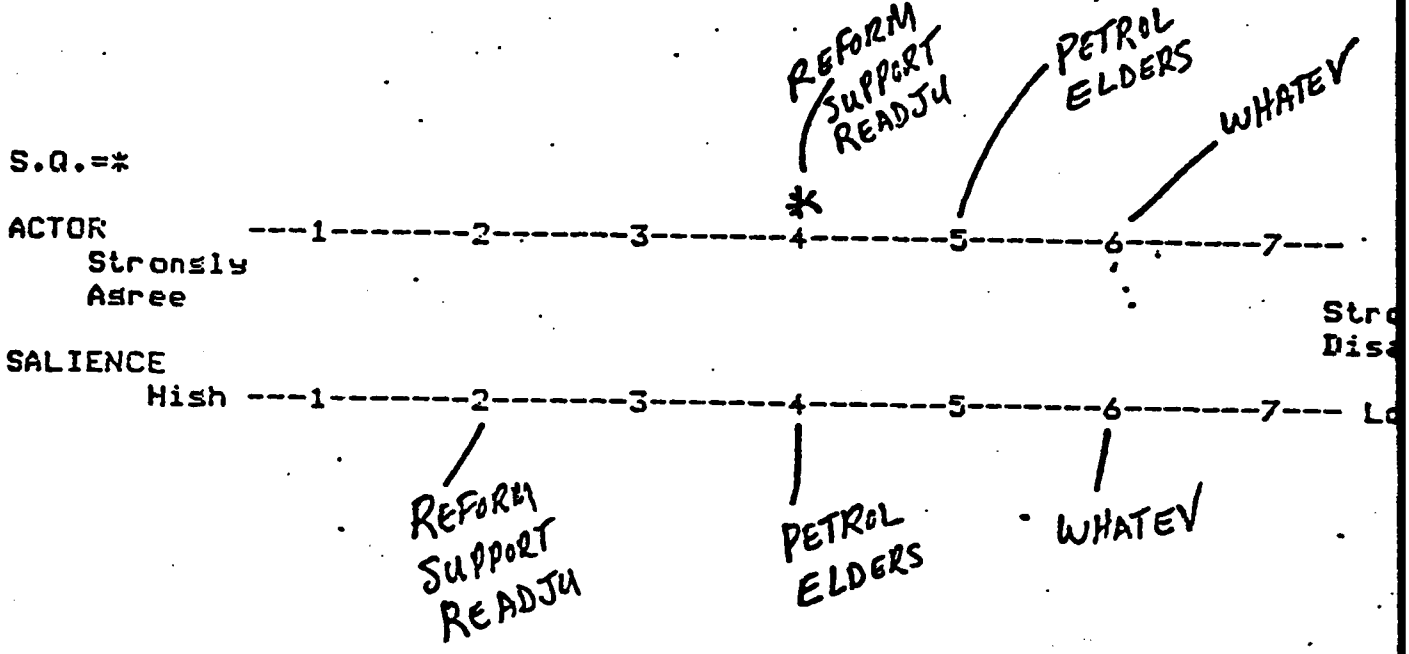
1 APR 1982

Date----------

SUBJECT:

Analyst SEN

China should support the status quo on Korean Peninsula to preclude development of instability there.



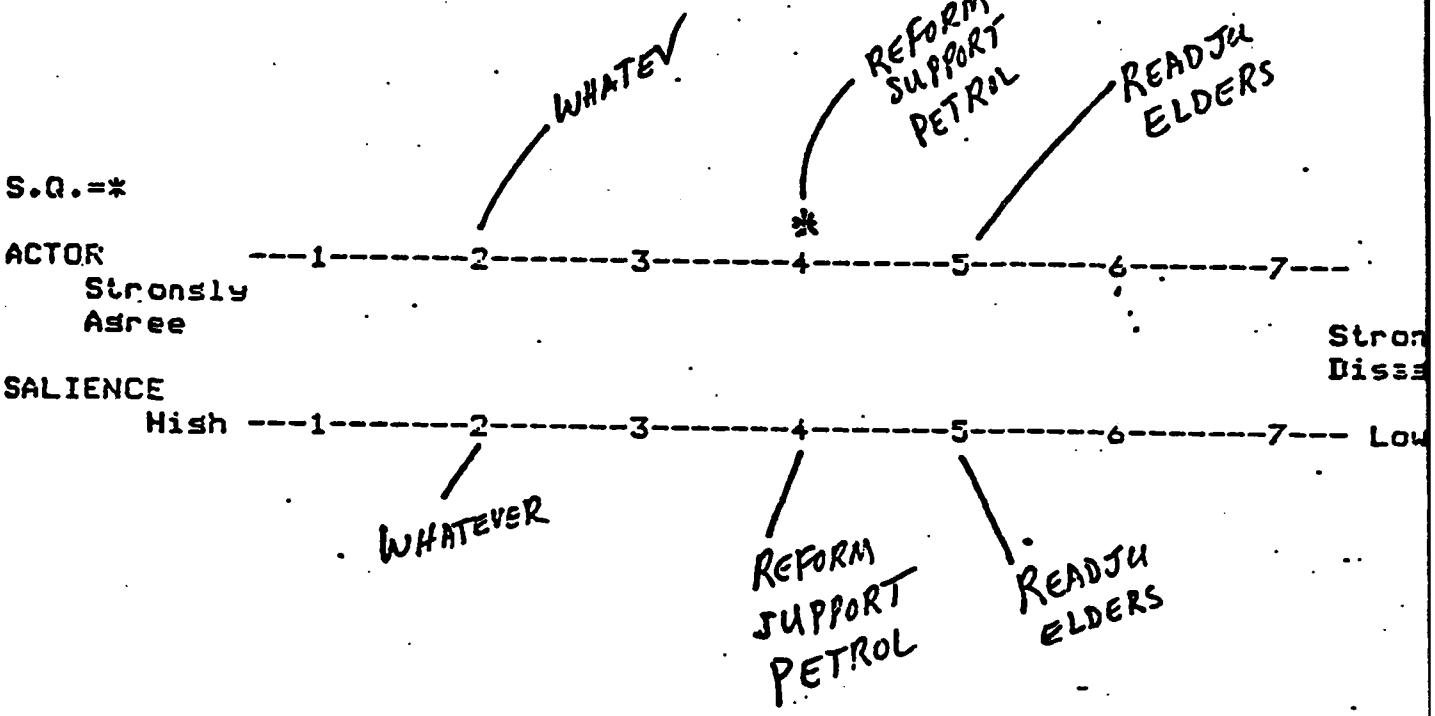
	Reformers	Supporters	Readjusters	Elders	Petroleum	Whateverists
Risk-Score	-1.000	-1.000	-1.000	.032	.032	.701

The current policy in force is not susceptible to change by any group given that all resources are marshaled to resolve debate over this issue.

Issue Nr FP-16 --- Date 1 APR 1982

SUBJECT: Analyst SEN

China should develop a strategic-economic relationship with Japan.



	Reformers	Supporters	Readjusters	Elders	Petroleum	Whateverists
Risk-Score	-1.000	-1.000	.306	.256	-1.000	.389

The current policy in force is not susceptible to change by any group given that all resources are marshaled to resolve debate over this issue. Although some resistance by the Elders and Readjusters is likely, the Reformers and their supporters dominate on this issue. The status quo is not expected to change.

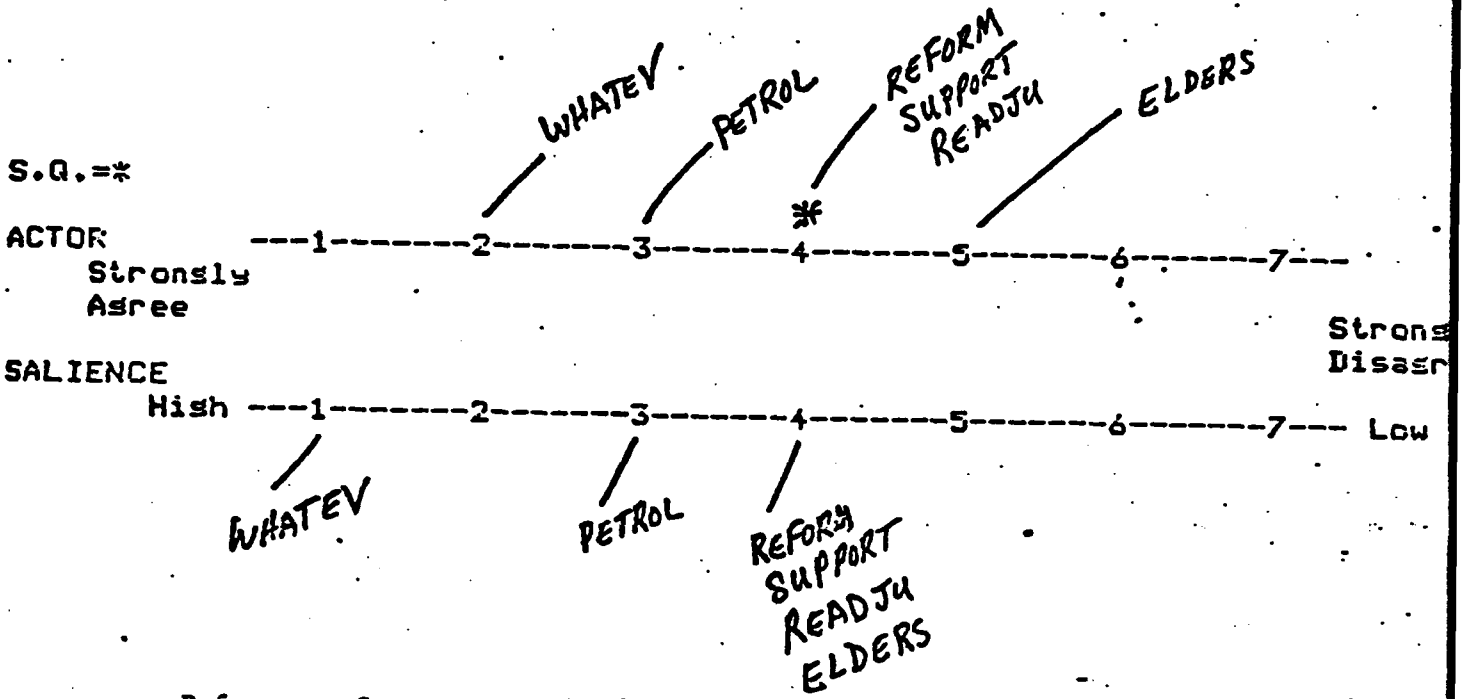
Issue Nr FP-17

Date 1 APR 1982

SUBJECT:

Analyst SEN

The "three-world concept" should be stressed more. (The US-USSR are contending and conflicting; the second world, Japan and the West, are in between; and the Third World, with China, are trying to influence the outcome as a group and by influencing the second world)



	Reformers	Supporters	Readjusters	Elders	Petroleum	Whateverists
Risk Score	-1.000	-1.000	-1.000	-.038	-.042	.540

The current policy in force is not likely to change since the status quo is located at the position that minimizes its vulnerability to credible threats. Only the Petroleum interests and the Whateverists believe they have something to gain by challenging the status quo. Each of these groups, however, can be defeated by the dominant coalition consisting of the Reformers, Supporters, and Readjusters. Some struggle with the Petroleum interests is likely, with the possibility that the dominant coalition might make a minor compromise on this issue -- which is not very important to them -- in exchange for gains on some other issue. Further analysis would be required to determine whether such a "trade" on issues is possible or likely.

M-1

Issue Nr ---

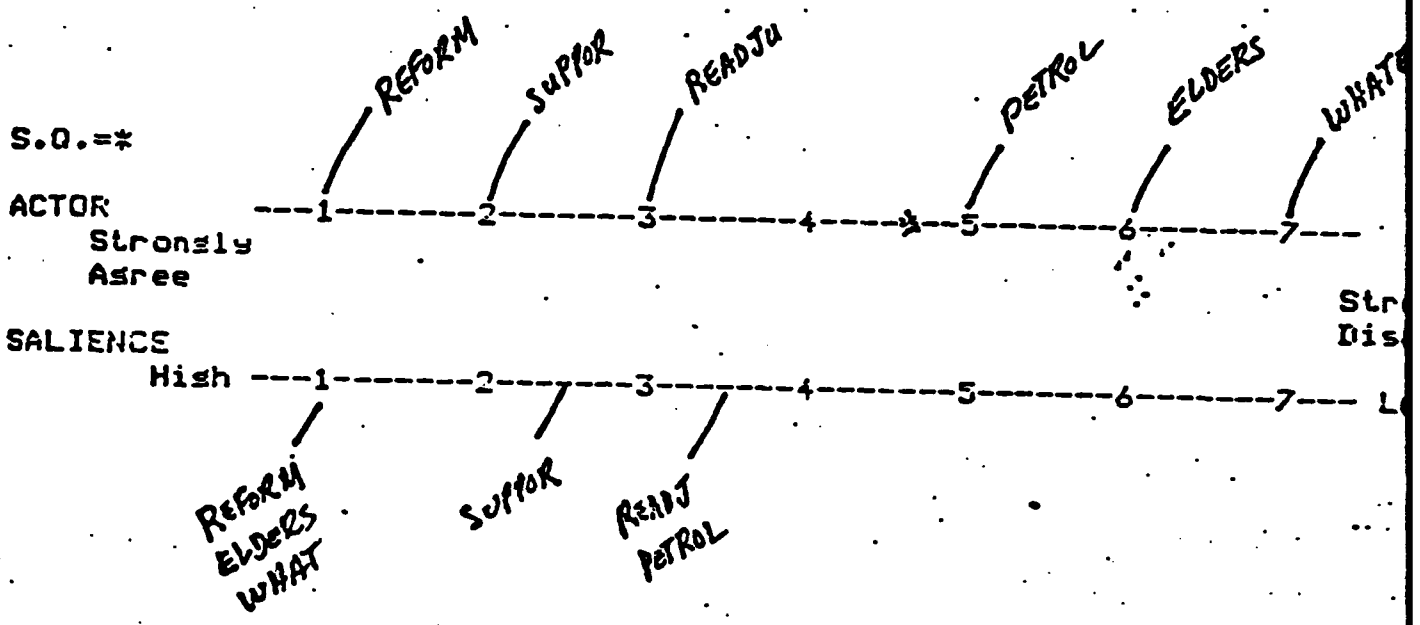
1 APR 1982

Date----------

SUBJECT:

Analyst--SEN---

Hu Yaobang should be elected Chairman, Military Commission.



	Reformers	Supporters	Readjusters	Elders	Petroleum	Whateverists
Risk Score	-.585	-.894	-.958	.439	-.264	.510

The optimal outcome on this issue from the perspective of minimizing subsequent challenges is for a shift to the preferred position of the Readjusters. However, the Readjusters can be defeated both by the Elders at one extreme and by the Reformers at the other extreme. The preference of the Reformers is moderated somewhat by the fact that they are vulnerable on this issue to the Supporters who, in turn, neither can defeat the Elders nor the current status quo. Furthermore, the position of the Supporters is moderated by the fact that it is susceptible to being changed by pressure from the Readjusters. Thus, the main forces are pulling this issue toward the Readjusters, with some countervailing pressure from the Elders in the other direction. The forecast on this issue is for an outcome between locations "3" and "3.7" above.

M-2

Issue Nr ---

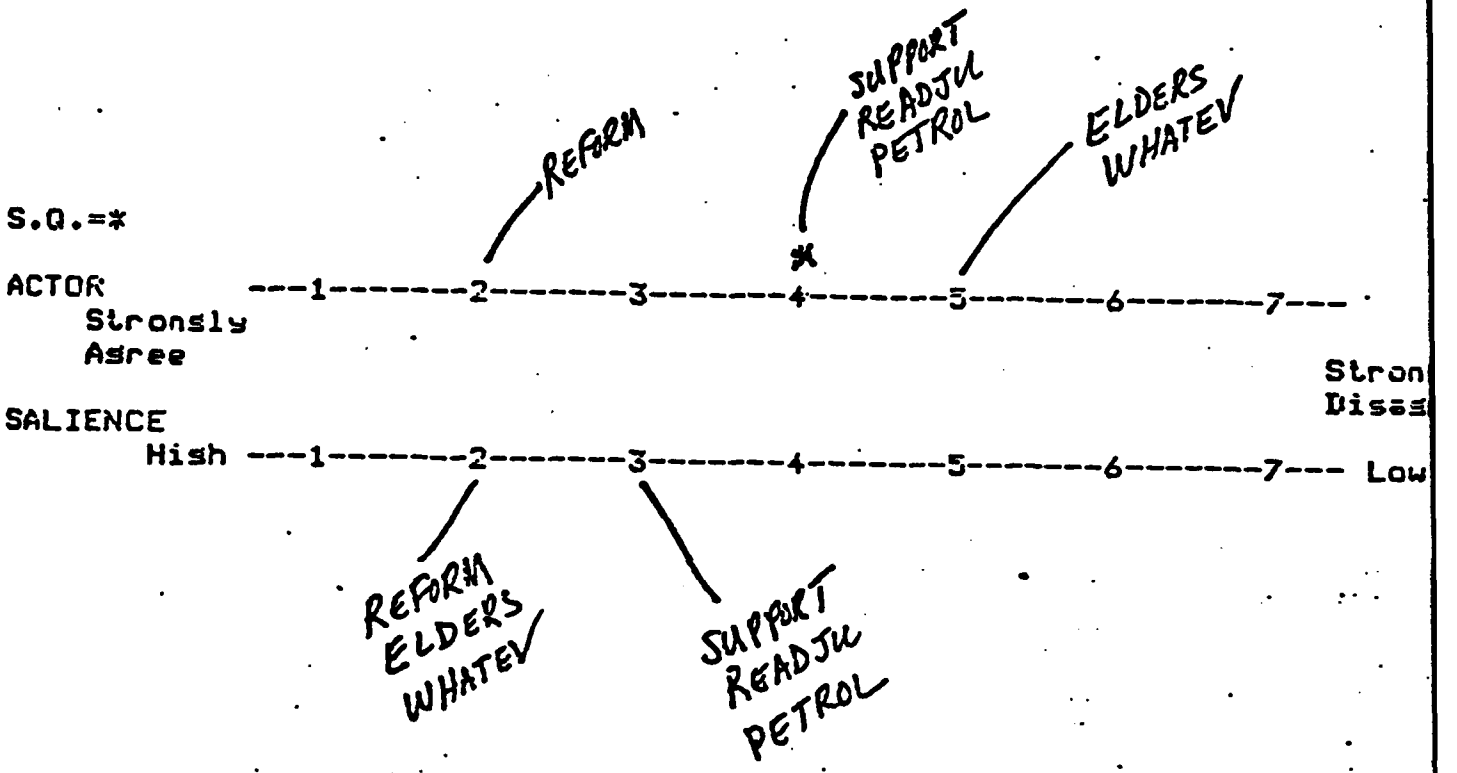
1 APR 1982

Date----------

SUBJECT:

Analyst---SEN---

The successor leadership should be a triumvirate of the Party Chairma the Premier, and a military leader. The Chairman, Military Commissio should be that military leader.



	Reformers	Supporters	Readjusters	Elders	Petroleum	Whateverists
Risk Score	.604	-1.000	-1.000	.307	-1.000	.176

The current policy in force is not susceptible to change by any group given that all resources are marshaled to resolve debate over this issue.

M-3

Issue Nr ---

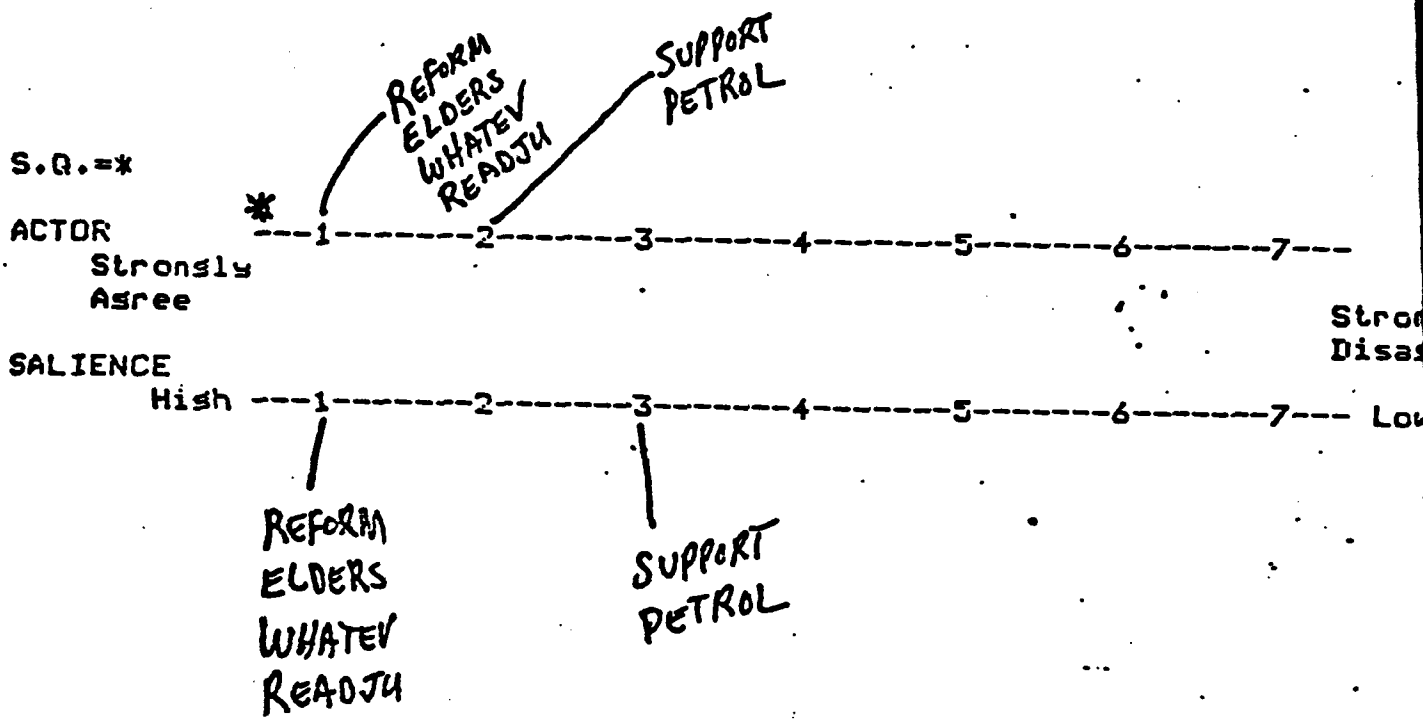
1 APR 1982

Date----------

SUBJECT:

Analyst---SEN

The absolute control of the Party over the CPLA should be upheld.



	Reformers	Supporters	Readjusters	Elders	Petroleum	Whateverists
Risk Score	-.985	.428	-1.000	-1.000	.316	-1.000

The current policy in force is vulnerable to change by the Reformers/Elders/Whateverists/Readjusters coalition, with the most stable policy choice being at their preferred position. This is the outcome forecast for this issue.

M-5

Issue Nr ---

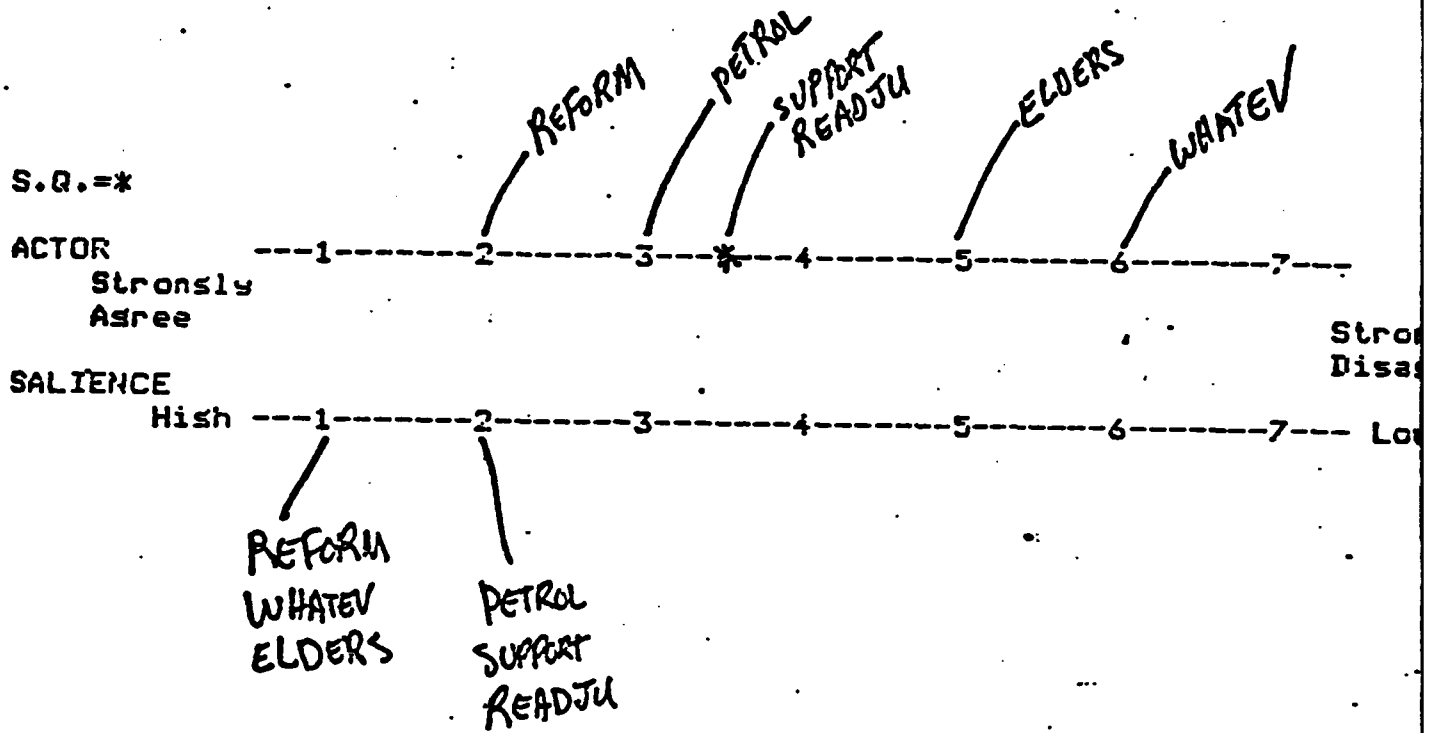
1 APR 1982

Date----------

SUBJECT:

Analyst---SEV---

A civilian, rather than a military figure, should be appointed to the post of Minister of National Defense.



	Reformers	Supporters	Readjusters	Elders	Petroleum	Whateverists
Risk Score	.341	-.917	-.958	.332	-.740	.442

The current policy in force is not susceptible to change by any group given that all resources are marshaled to resolve debate over this issue.

M-6

Issue Nr ---

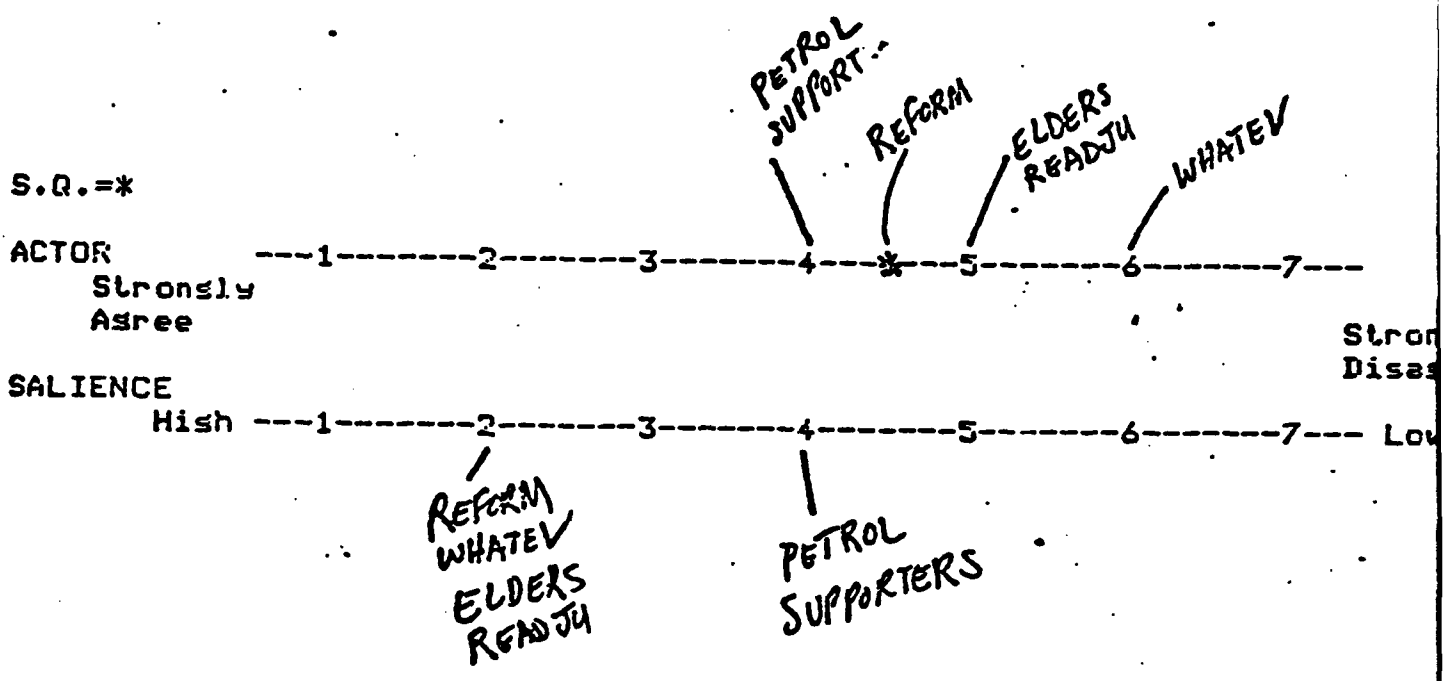
1 APR 1982

Date----------

SUBJECT:

Analyst---SEN

In view of the progressively increasing Soviet military threat and CPLA technological backwardness, military modernization should be raised to Number 3 in priority.



	Reformers	Supporters	Readjusters	Elders	Petroleum	Whateverists
Risk Score:	-.402	.069	-.588	-.658	-.026	.441

The current policy in force is not susceptible to change by any groups given that all resources are marshaled to resolve debate over this issue.The preferences of the Reformers dominate on this issue.

Issue Nr M-7

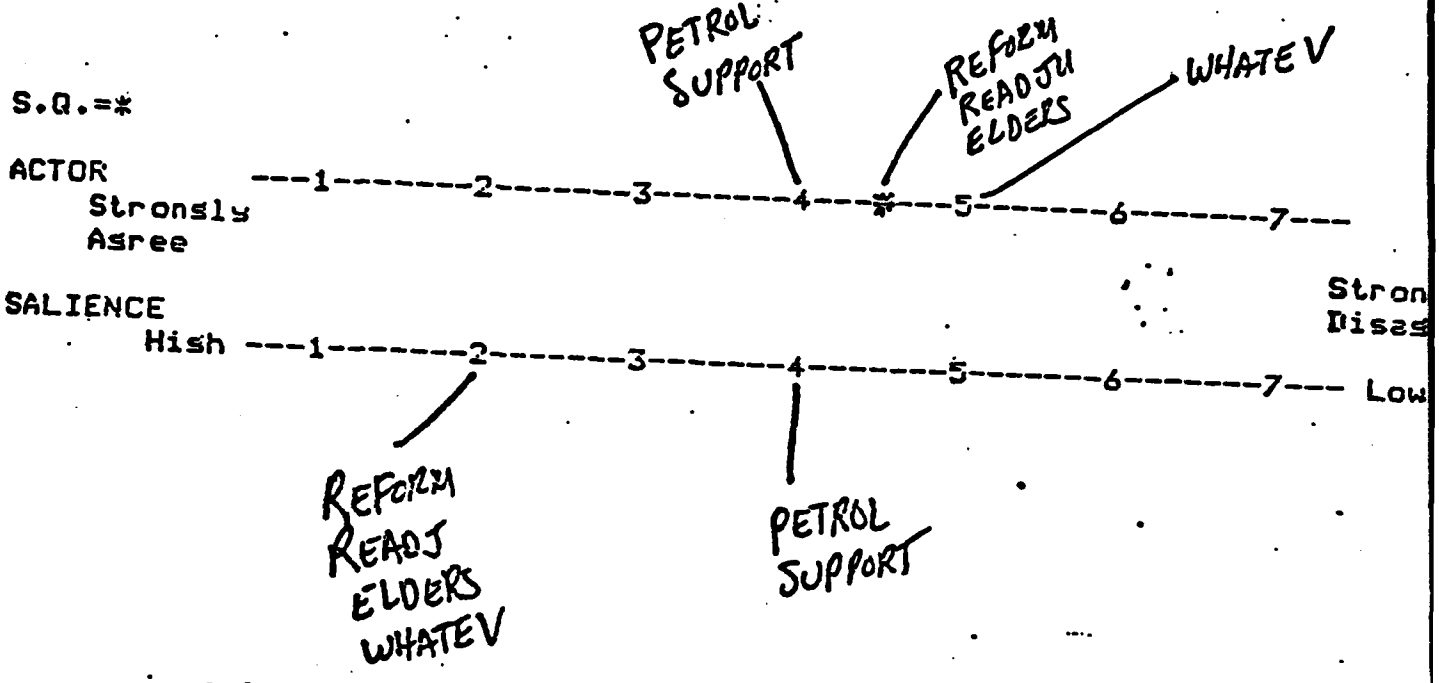
1 APR 1982

Date

SUBJECT:

Analyst SEI

The military's share of the budget should be significantly increased.



	Reformers	Supporters	Readjusters	Elders	Petroleum	Whateverists
Risk Score:	-1.000	.447	-1.000	-1.000	.346	.103

The current policy in force is not susceptible to change by any group given that all resources are marshaled to resolve debate over this issue. The coalition of Reformers, Readjusters and Elders is dominant on this issue. Only the Supporters believe they have something to gain by challenging the status quo, however they are easily defeated by those who support the status quo. Any challenge by the Supporters would be minor in scope.

M-9

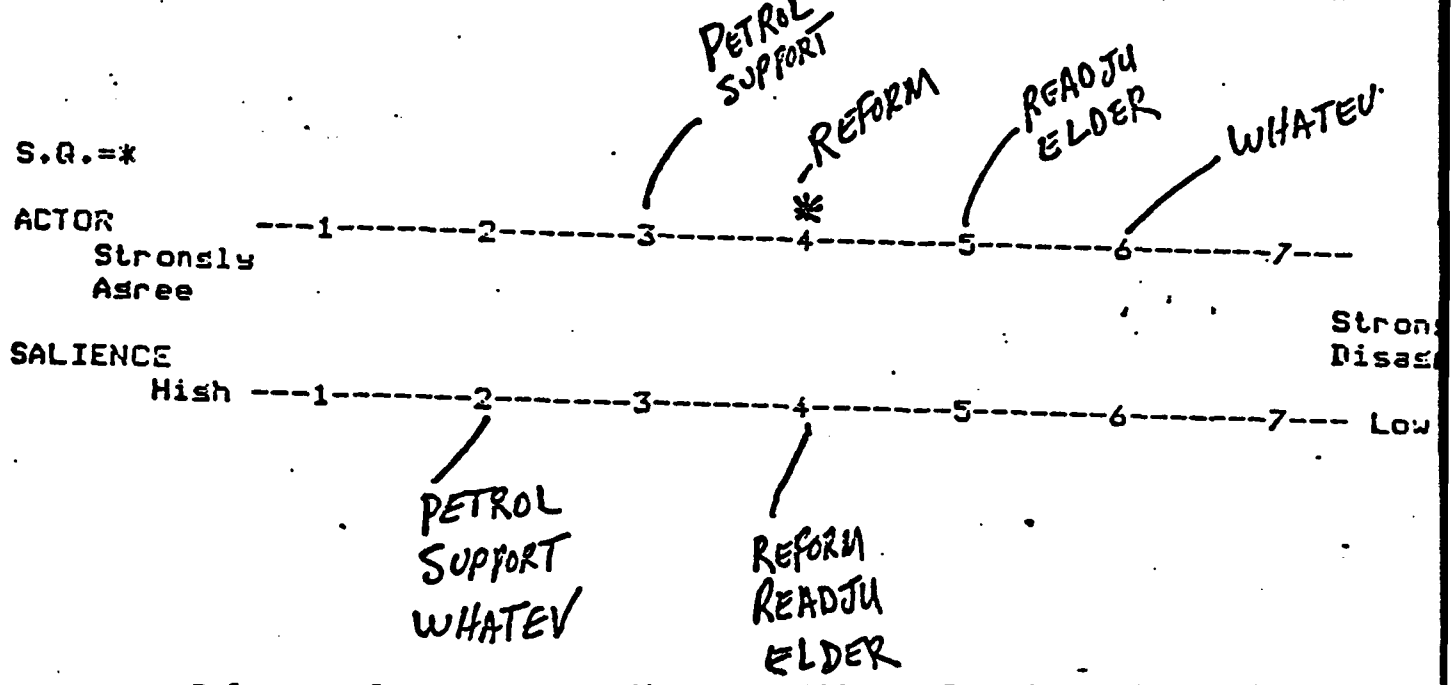
Issue Nr ---

Date 1 APR 1992

SUBJECT:

Analyst SEN

Because it takes years for the Chinese to absorb, adapt, and mass produce advanced foreign weapons systems, the CPLA should attempt to "leapfrog" into modernization via technology transfers and co-production techniques.



	Reformers	Supporters	Readjusters	Elders	Petroleum	Whateverists
Risk Score:	-1.000	-.274	-.210	-.267	-.461	.419

The current policy in force is not susceptible to change by any group given that all resources are marshaled to resolve debate over this issue. However, all groups preferring a different outcome believe they can defeat the policy in force. However the Reformers dominate all potential challengers. Any competition over this issue is likely to be minor.

M-10

Issue Nr ---

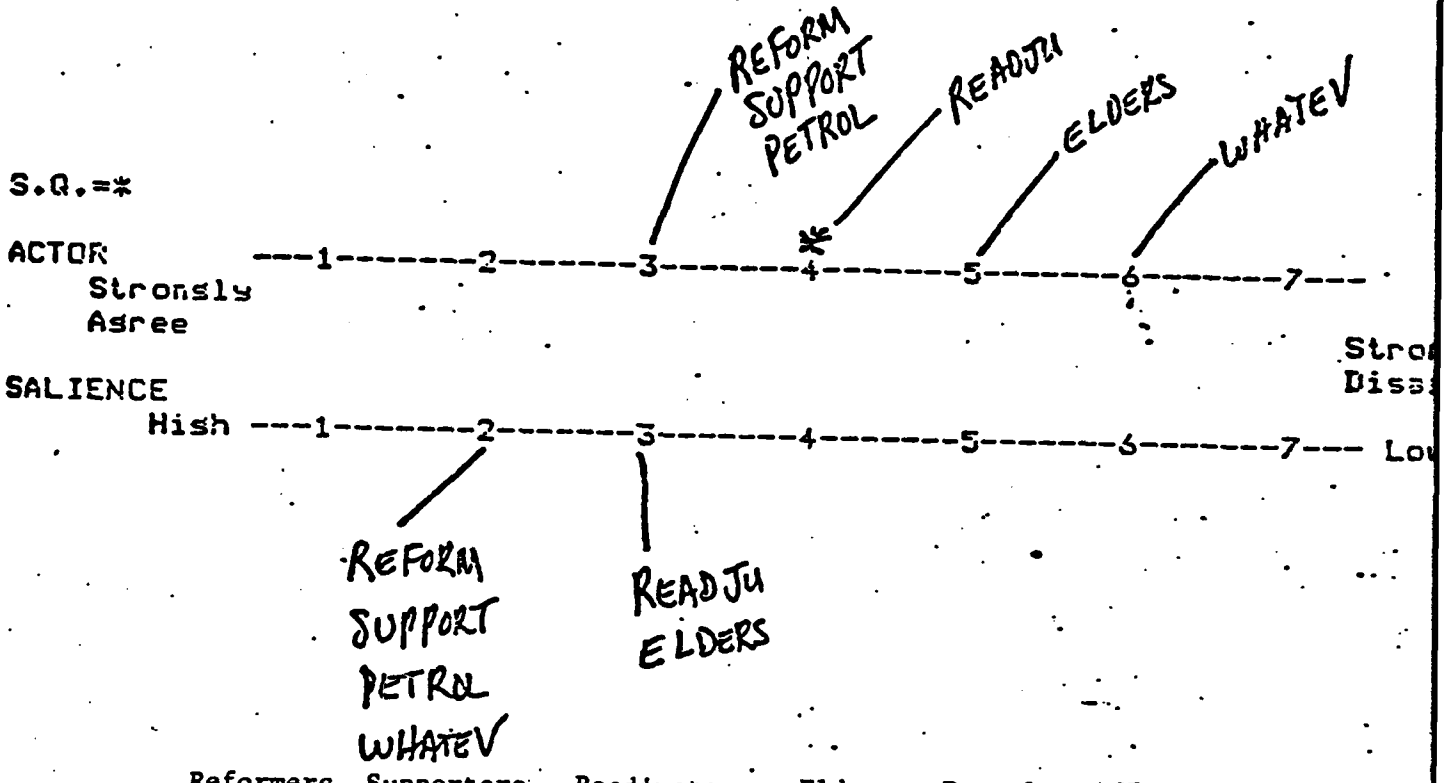
1 APR 1982

Date----------

SUBJECT:

Analyst-SEN

The military share, as opposed to the civilian one, of the S&T resources should be increased.



	Reformers	Supporters	Readjusters	Elders	Petroleum	Whateverists
Risk Score:	-1.000	-1.000	-.419	.403	-1.000	.722

The current policy in force is unstable. It is likely to be changed, especially in response to pressure from the coalition of the Reformers, Supporters, and the Petroleum interests. This group dominates all others on this issue. The new outcome is forecast to be at position "3" on the issue spectrum above.

M-8

Issue Nr ---

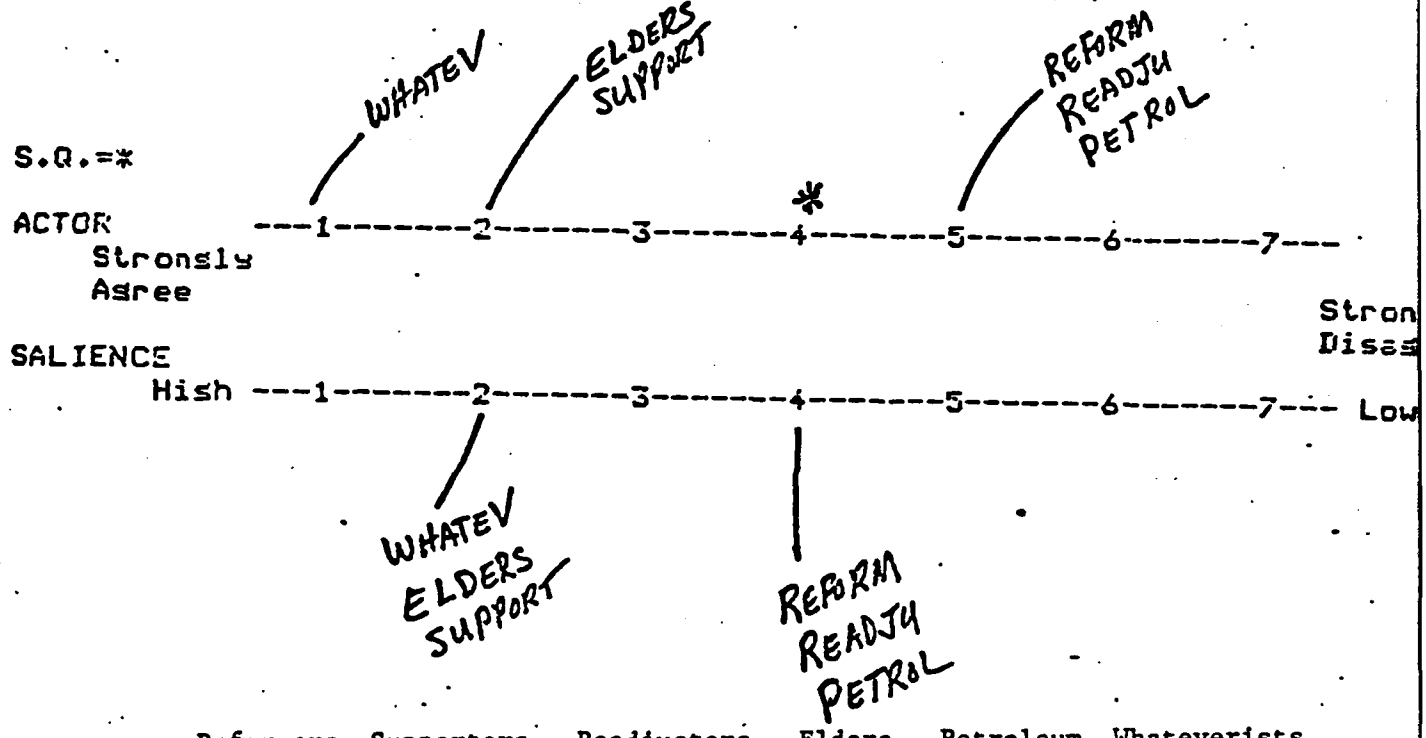
1 APR 1982

Date----------

SUBJECT:

Analyst--SEN

As keepers of the tradition of orthodoxy, discipline, and stability, the CPLA should constitute a brake on the nature and pace of reform.



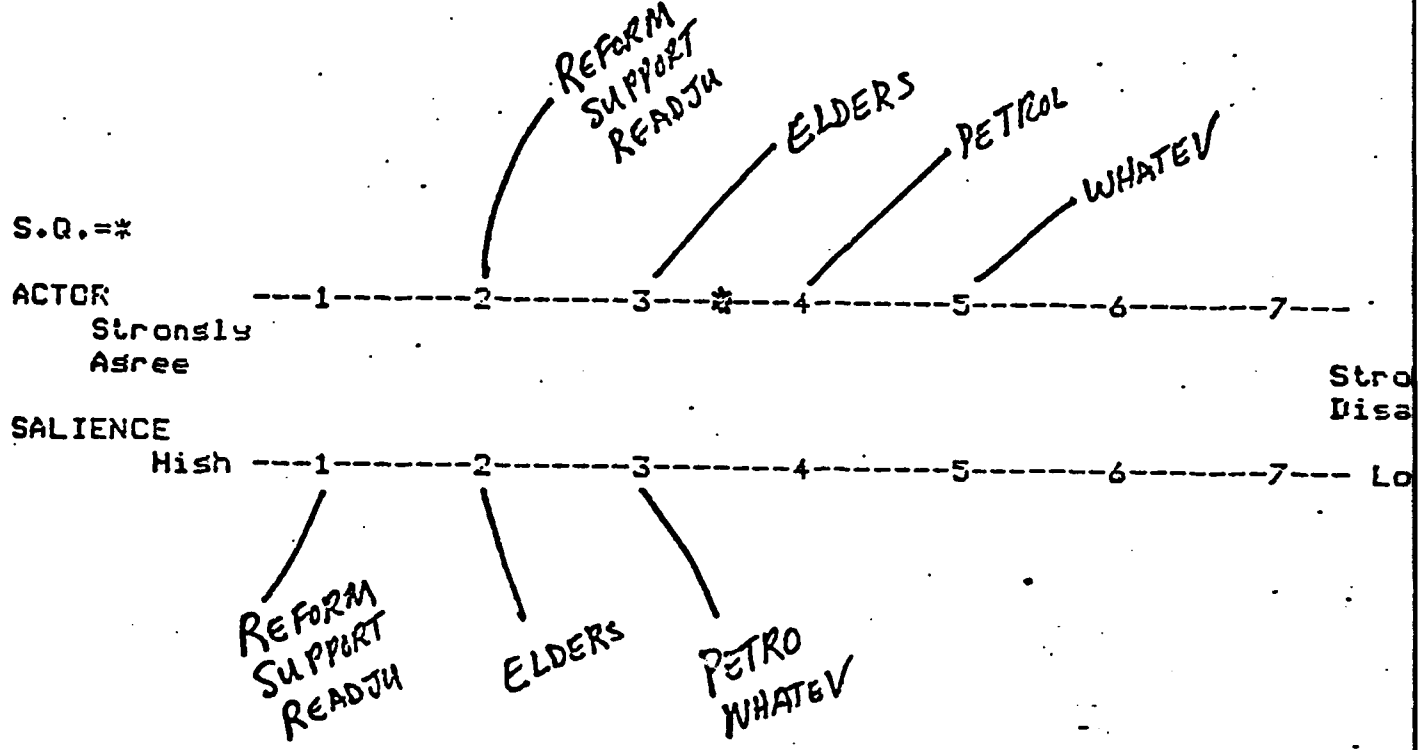
	Reformers	Supporters	Readjusters	Elders	Petroleum	Whateverists
Risk Score:	.073	-.234	-.102	-.548	-.152	-.208

The current policy in force is unstable. It is likely to be changed, especially in response to pressure from the Elders and the Supporters. Such a policy change, however, is not likely to occur without a significant struggle from the Reformers, who believe they can defeat the Supporters and the Elders. The Supporters, for their part also believe they can defeat the Reformers. While the Reformers are somewhat more likely to win that struggle than are the Supporters, the new policy outcome as I forecast it is for the status quo to shift to an outcome between location "2" and location "3.2" on the above policy spectrum.

Issue Nr E-1 --- Date 1 APR 1982

SUBJECT: Analyst SEV

Development of agriculture and light industry should retain priority over heavy industry.



	Reformers	Supporters	Readjusters	Elders	Petroleum	Whateverists
Risk-Score	-1.000	-1.000	-1:000	-.375	.408	.779

The current policy in force is unstable. It is likely to change, especially in response to pressure from the coalition of Reformers, Supporters, and Readjusters. The new Chinese policy on this issue is forecast to be in position "2" on the policy spectrum above.

E-2

Issue No ---

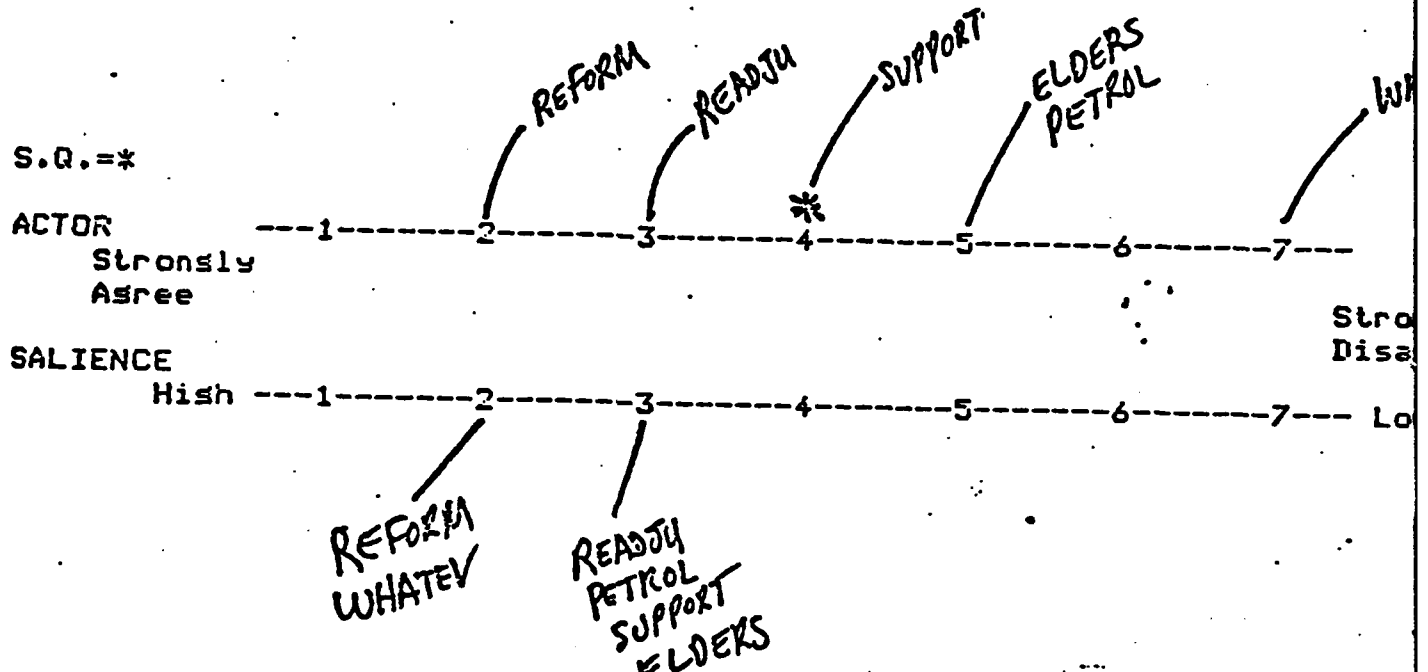
1 APR 1982

Date----------

SUBJECT:

Analyst--SEV------

Under the new system of "economic responsibility," the commune system should be abolished.



	Reformers	Supporters	Readjusters	Elders	Petroleum	Whateverists
Risk-Score	-.007	-.858	-.617	-.442	-.442	.708

The current policy in force, which is supported by the Supporters, is vulnerable to change by the Reformers, who believe they can both defeat the status quo and its main defender, the Supporters. However, the Supporters mistakenly believe they can defeat the Reformers, implying a struggle over this issue. Matters are further complicated by the fact that while the Reformers defeat the Supporters, the Readjusters can defeat the Reformers. The Readjusters, in turn, neither believe they can defeat the Supporters or the ststus quo. The upshot is little or no change in policy on this issue, but considerable potential for instability if any capabilities, preferences, or saliences change.

Issue Nr E-3

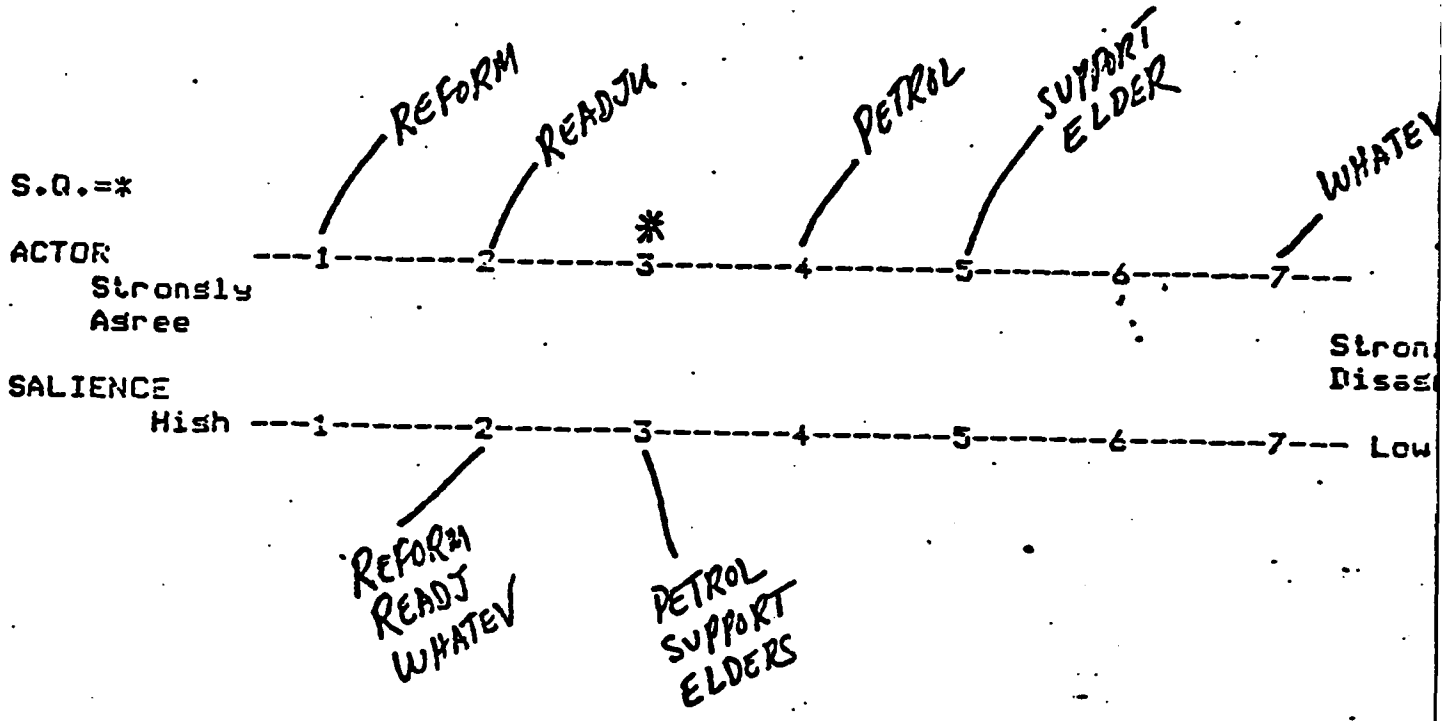
1 APR 1982

Date----------

SUBJECT:

Analyst--SEN---------

Stress should be put on the decentralization of decisionmaking as well as on greater reliance on market forces and material incentives to spur production and promote economic growth.



	Reformers	Supporters	Readjusters	Elders	Petroleum	Whateverists
Risk Score	.378	-.341	-.246	-.565	-.963	.357

The current policy in force is vulnerable to change by the Readjusters, while the most stable policy choice would be at the outcome preferred by the Petroleum interests. That outcome is most stable in the sense that it would provoke the fewest credible challenges. However, I do not forecast a shift to that most stable position. Rather, I forecast a small shift in policy toward the outcome preferred by the Readjusters. They are the dominant force on this issue even though the Supporters and Whateverists mistakenly believe they can defeat the Readjusters. After some minor struggle over this issue, the outcome will shift to the forecast position.

E-4

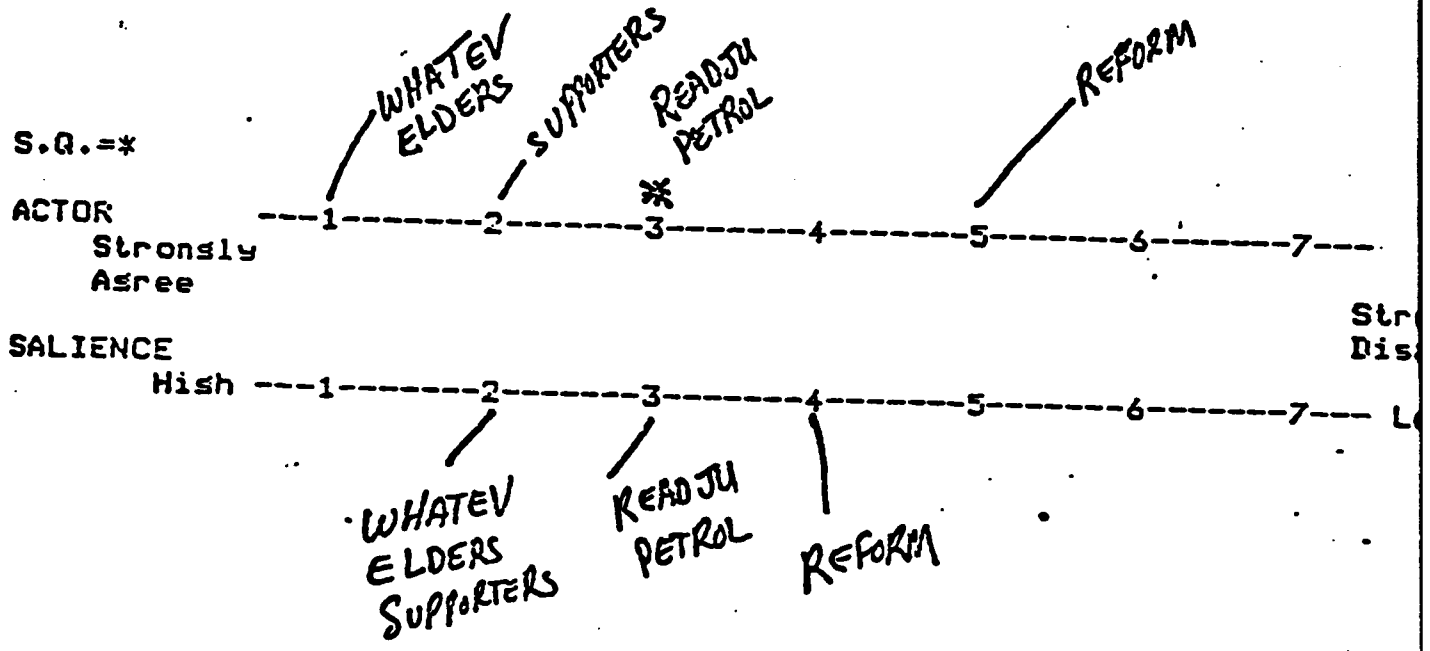
Issue Nr ---

1 APR 1932
Date----------

SUBJECT:

Analyst--SEN----

In economic and technical contacts with the West, self-sufficiency should be maintained.



	Reformers	Supporters	Readjusters	Elders	Petroleum	Whateverists
Risk Score	.719	-.655	-.634	.034	-.681	-.214

The current policy in force is unstable. It is likely to be changed, especially in response to pressure from the Supporters. However, the Reformers are likely to put up a considerable struggle as they believe they can defeat the Supporters. This is likely to be a close contest, slightly favoring the Supporters, but necessitating a compromise settlement that shifts the Chinese policy on this issue to about issue position "2.5" on the issue spectrum above.

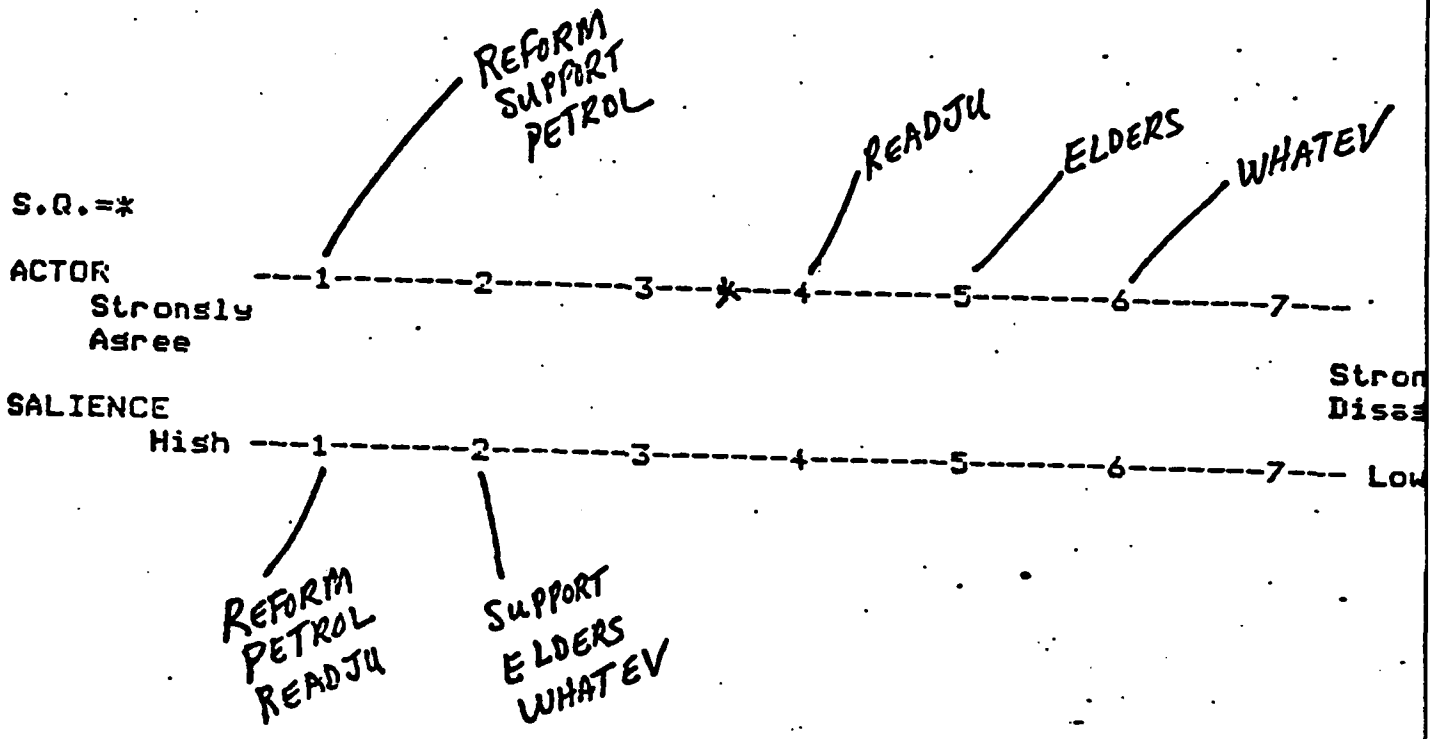
Issue Nr E-5

Date 1 APR 1982

SUBJECT:

Analyst SEN

Foreign technology and foreign investment are key elements in achieving the four modernizations. They should be substantially increased.



	Reformers	Supporters	Readjusters	Elders	Petroleum	Whateverists
Risk Score	-1.000	-1.000	.136	.317	-1.000	.473

The current policy in force is not likely to change, although it is very far from its optimal position. Its optimal location, at least in terms of minimizing credible challenges to it, would be for the policy outcome to be located at position "1" on the issue spectrum. This is not forecast to occur, however, because no group believes that there are large enough potential gains to warrant attempting to alter the current policy. Further analysis would be required to ascertain what effect small changes in capabilities, salience, or preferences would have on the forecast.

E-6

Issue Nr ---

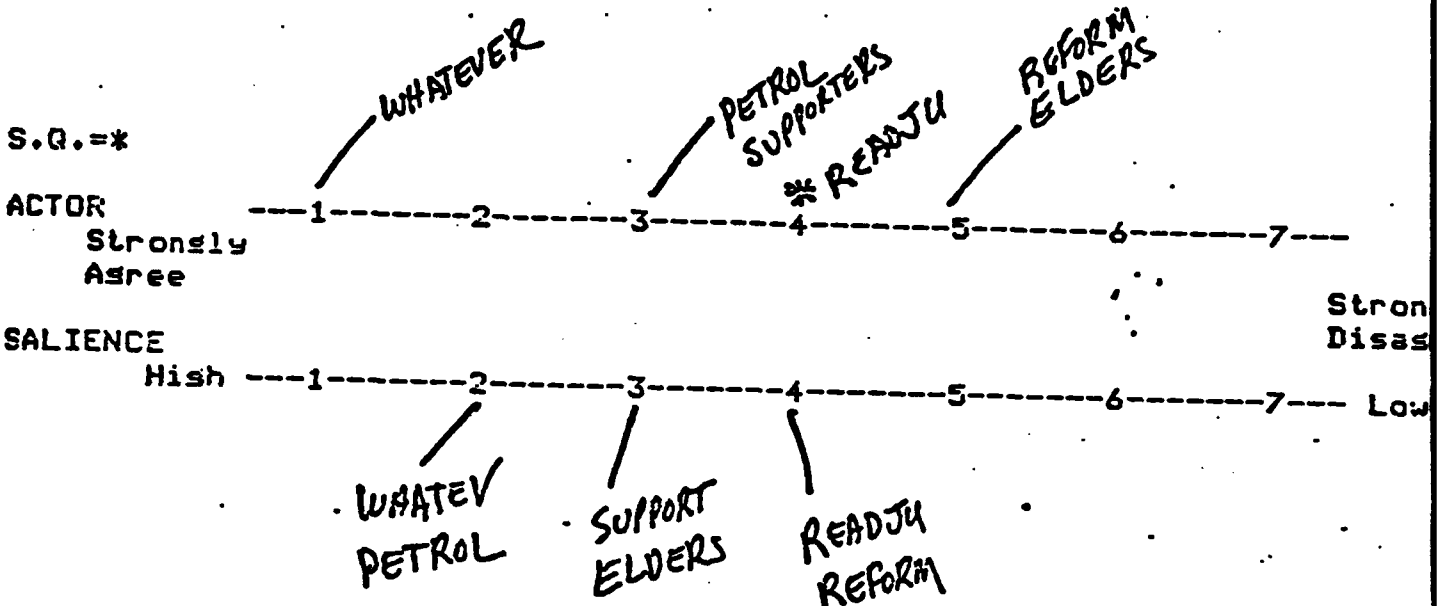
1 APR 1982

Date----------

SUBJECT:

Analyst--SEN---

If US sales of high technology are not forthcoming, China should turn to Japan and the West at the expense of the US, rather than turn toward the USSR for such help.



	Reformers	Supporters	Readjusters	Elders	Petroleum	Whateverists
Risk Score	.203	-.633	-.814	.004	-.717	.597

The current policy in force is not likely to change. It is at its most secure position, at least in the sense that it is vulnerable to a minimial magnitude of challenges. However, the current status quo, which is defended by the Readjusters, can be beaten by the Petroleum Group. The Petroleum Group, however, can be defeated by the Reformers. The Reformers, in turn, are beaten by the Readjusters who, in completing the cycle, can be beaten by the Petroleum Group. In other words, the current policy in force represents a tenuous compromise among competing interests. Further analysis would be required to identify the likelihood of policy change if capabilities, salience, or preferences change.

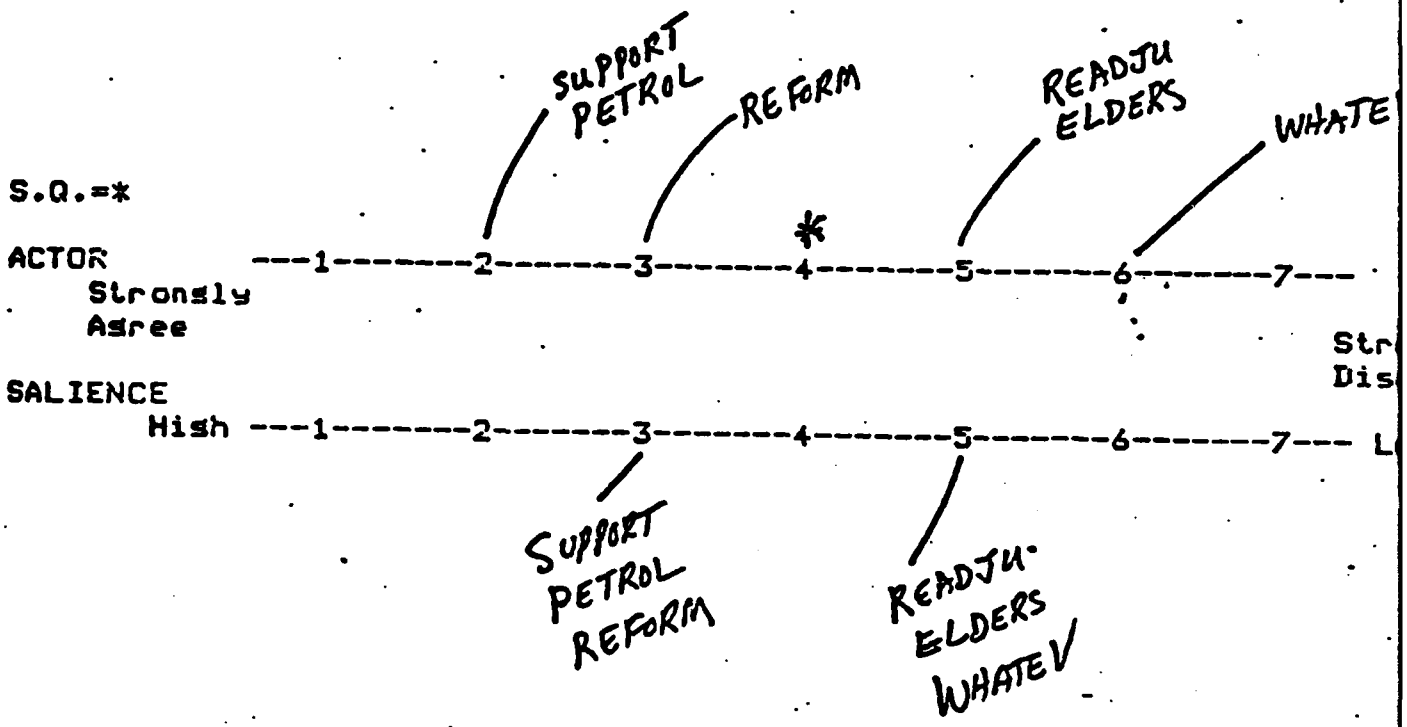
Issue Nr E-7

Date 1 APR 1982

SUBJECT:

Analyst SEN

The CPLA should be reduced in its economic production role.



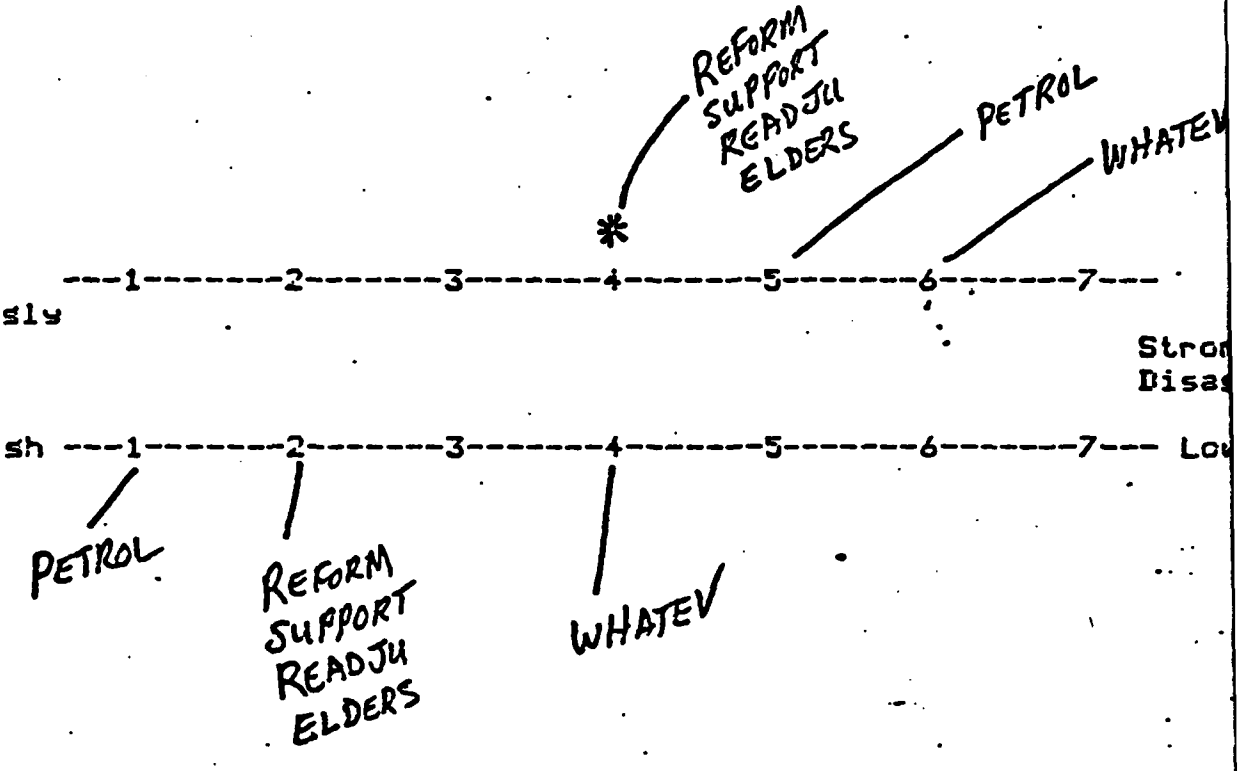
	Reformers	Supporters	Readjusters	Elders	Petroleum	Whateverists
Risk Score	-.832	-.773	.109	.073	-.814	.569

The current policy in force is unstable. It is likely to be changed, especially in response to pressures from the Reformers. The new Chinese policy on this issue is forecast to be at position "3" on the issue spectrum.

Issue Nr E-8 Date 1 APR 1982

SUBJECT: Analyst SEN

Capital investment should be reduced.



	Reformers	Supporters	Readjusters	Elders	Petroleum	Whateverists
Risk Score	-1.000	-1.000	-1.000	-1.000	.239	.695

The current policy in force is not susceptible to change by any group given that all resources are marshaled to resolve debate over this issue.

Oct 27 178

ANGOLA

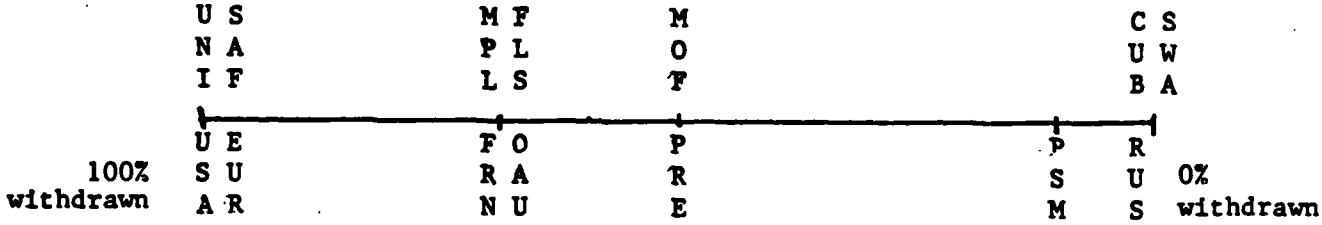
GROUPS AND CAPABILITIES

GROUPS	CAPABILITIES POL.	MIL.
Nationalist MPLA (MPL)	70	20
Junior Middle Grade Officers (MOF)	20	10
Pro-Soviet Military (PSM)	100	100
President (PRE)	70	50
Soviet Union (RUS)	90	90
Cuba (CUB)	80	100
Front Line States (FLS)	50	5
SWAPO (SWA)	30	5
UNITA (UNI)	0	40
South Africa (SAF)	0	90
United States (USA)	40	5
Western European Content Group (EUR)	10	0
France (FRN)	10	0
OAU (OAU)	10	0

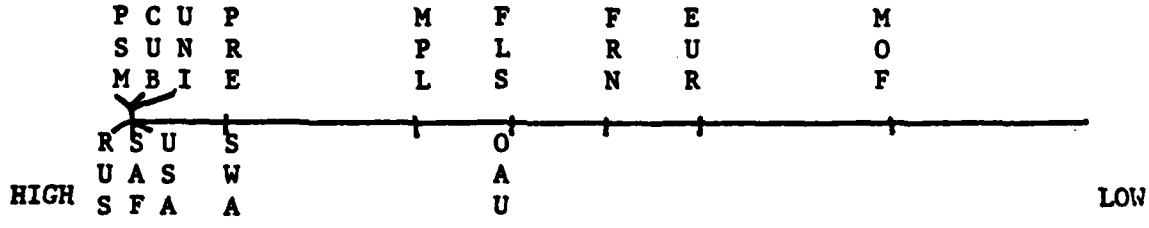
ANGOLA

ISSUE POSITIONS AND SALIENCE

ISSUE: What percentage of the 20,000 Cuban troops in Angola will be withdrawn to Cuba given the current situation?



SALIENCE:



ANGOLA

COALITION STRUCTURE

COALITION 1: MPL - FLS - FRN - OAU

COALITION 2: MOF - PRE

COALITION 3: RUS - CUB - PSM - SWA

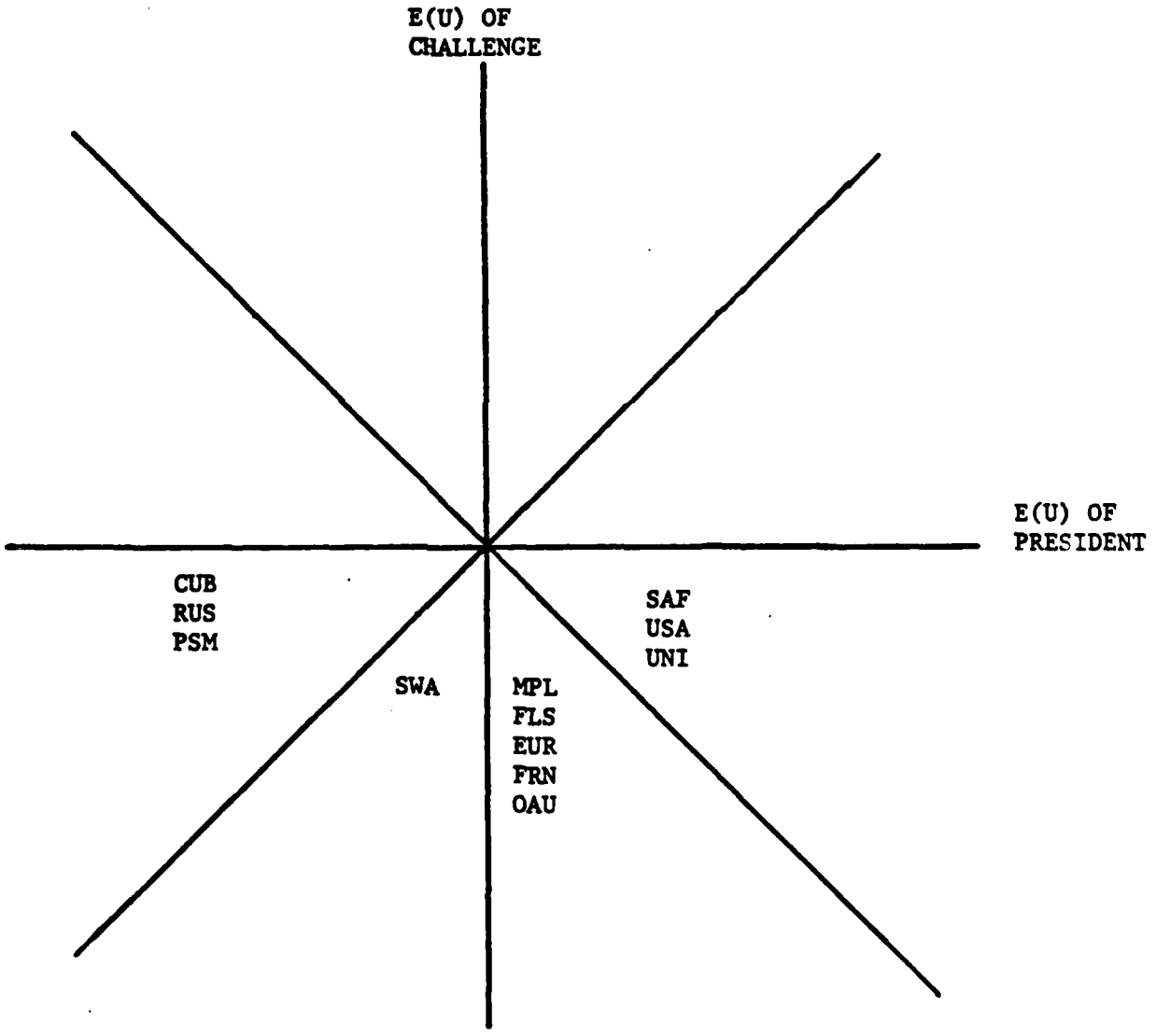
COALITION 4: UNI - SAF - USA - EUR

ANGOLA

EXPECTED UTILITY ANALYSIS

RISK AND SALIENCE

MILITARY AND POLITICAL CAPABILITIES



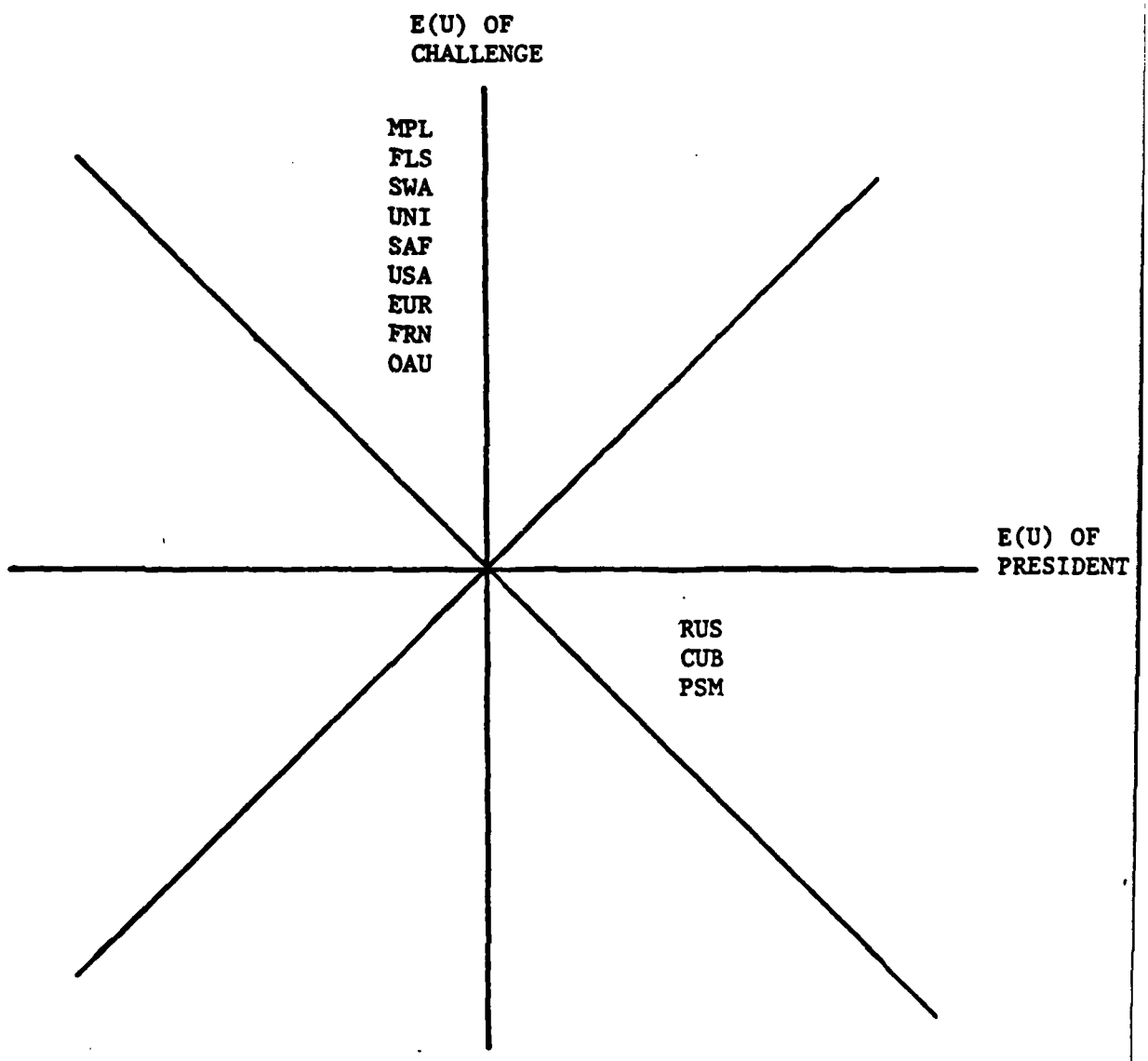
MOF (0,0)
PRE (0,0)

ANGOLA

EXPECTED UTILITY ANALYSIS

WITH SALIENCE

MILITARY AND POLITICAL CAPABILITIES



PRE(0,0)
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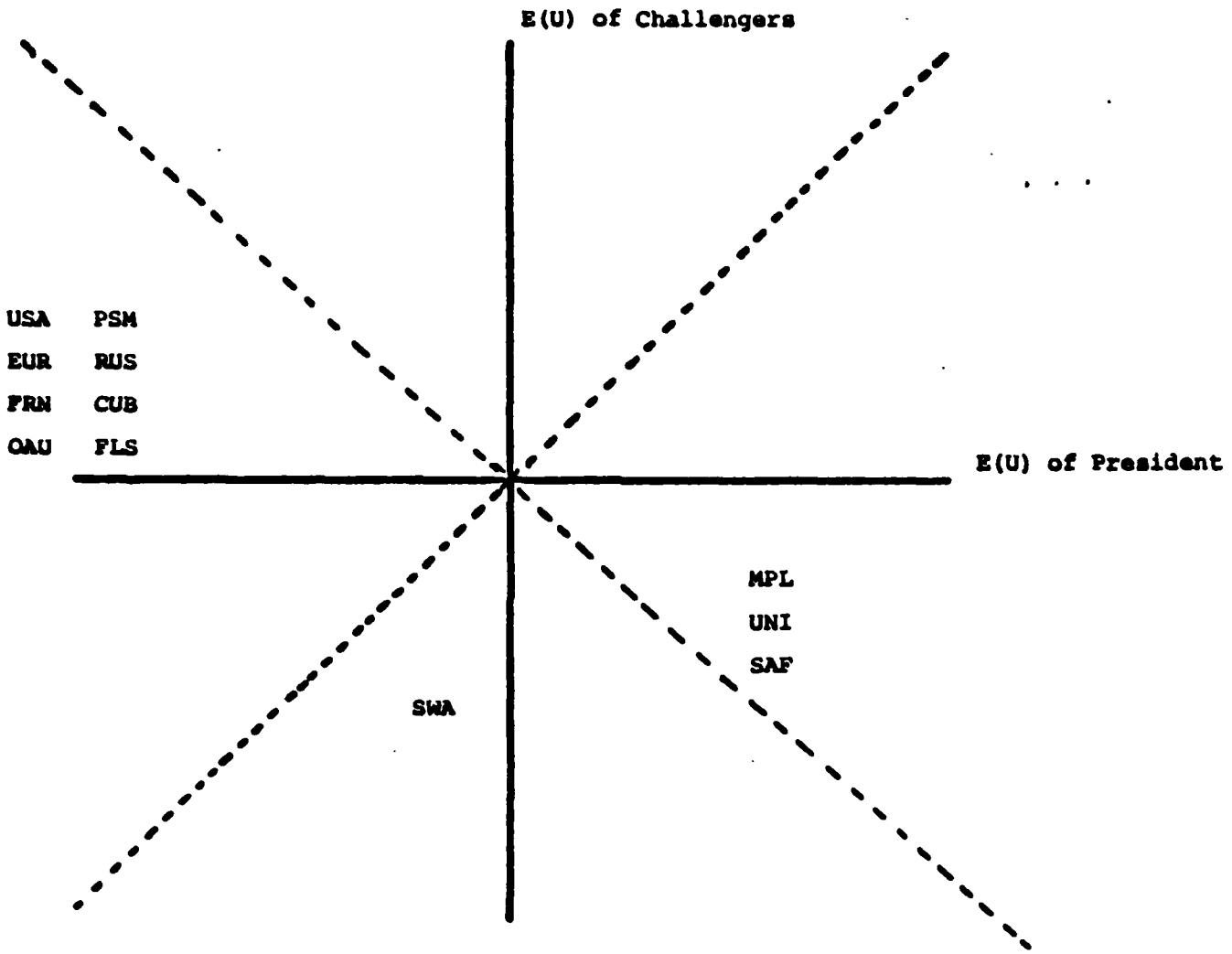
ANGOLA

CUBAN TROOP WITHDRAWAL FORECAST: SIMULATION

NOVEMBER, 1982



FO=0

This simulation assumes that the United States, France, other European powers and the OAU modify their position to seek only a twenty percent withdrawal of Cuban troops, but pursue this moderate position with great intensity. The simulation indicates a shift in forecast outcome from no withdrawal to a ten to twelve percent withdrawal of Cuban troops, given the revised assumptions.

Nov. 13, 1982

PAKISTAN

EXECUTIVE SUMMARY

Our analysis of support for alternative regimes in Pakistan indicates a fair degree of stability for the current regime. Though the Martial-Law officers are subject to some pressure, the pressue is essentially from a coalition of groups favoring only a slightly more open political system which would include the Muslims and Zia in a coalition government. All of the other groups would prefer to see a more dramatic change but are not in the position to realize these goals. At most they are able to influence, to some extent the form of Zia's program of "democracy".

A second analysis was conducted to see whether the groups identified were able to challenge Zia by agreeing to over-throw him without a general agreement on who would replace him. Essentially, this analysis was performed by "folding" the continuum over on itself so Zia was now at one end and all groups to the right of Zia are now an equal distance to the left. This allows us to examine the the degree of support for the current regime rather than alternatives to it. This analysis indicates that Zia is vulnerable to a large number of groups, who if they worked in consort would be able to remove him. This would then create a void since the various groups are not in agreement on a replacement. This would then return us to the situation examined in the first analysis which suggests that if Zia were removed, without radical changes in the assumptions regarding resources and preferences, we should see a new regime which is not dramatically different from the current one.

PAKISTAN

GROUPS AND CAPABILITIES

GROUPS	CAPABILITIES POL.	ECO.	MIL.	TOT.
Army-martial law officers (GR1)	90	85	100	275
Army-pro Islamic (GR2)	45	25	25	95
Senior Civil Servants (GR3)	80	75	15	170
Provincial Civil Servants (GR4)	40	50	5	95
Army Moderates (GR5)	40	30	35	105
Army Populists (GR6)	30	15	20	65
Civil Service-Islamic (GR7)	40	40	5	85
Civil Serice-Populists (GR8)	40	20	5	65
Landlords-Big A (GR9)	45	65	5	115
Landlords-Big PPP (G10)	55	65	5	125
Middle Landlords (G11)	50	55	3	108
Landowning Peasants (G12)	30	30	0	60
Tenantry (G13)	15	10	0	25
Labor-Right (G14)	35	25	15	75
Labor-Moderate (G15)	40	35	10	85
Labor Radical (G16)	30	25	15	70
Professionals-Islamic (G17)	45	25	3	73
Industrialists (G18)	60	65	5	130
Clerics (G19)	60	40	15	115
Business Bazaaris (G20)	60	50	15	125
Middle Business (G21)	50	45	10	105

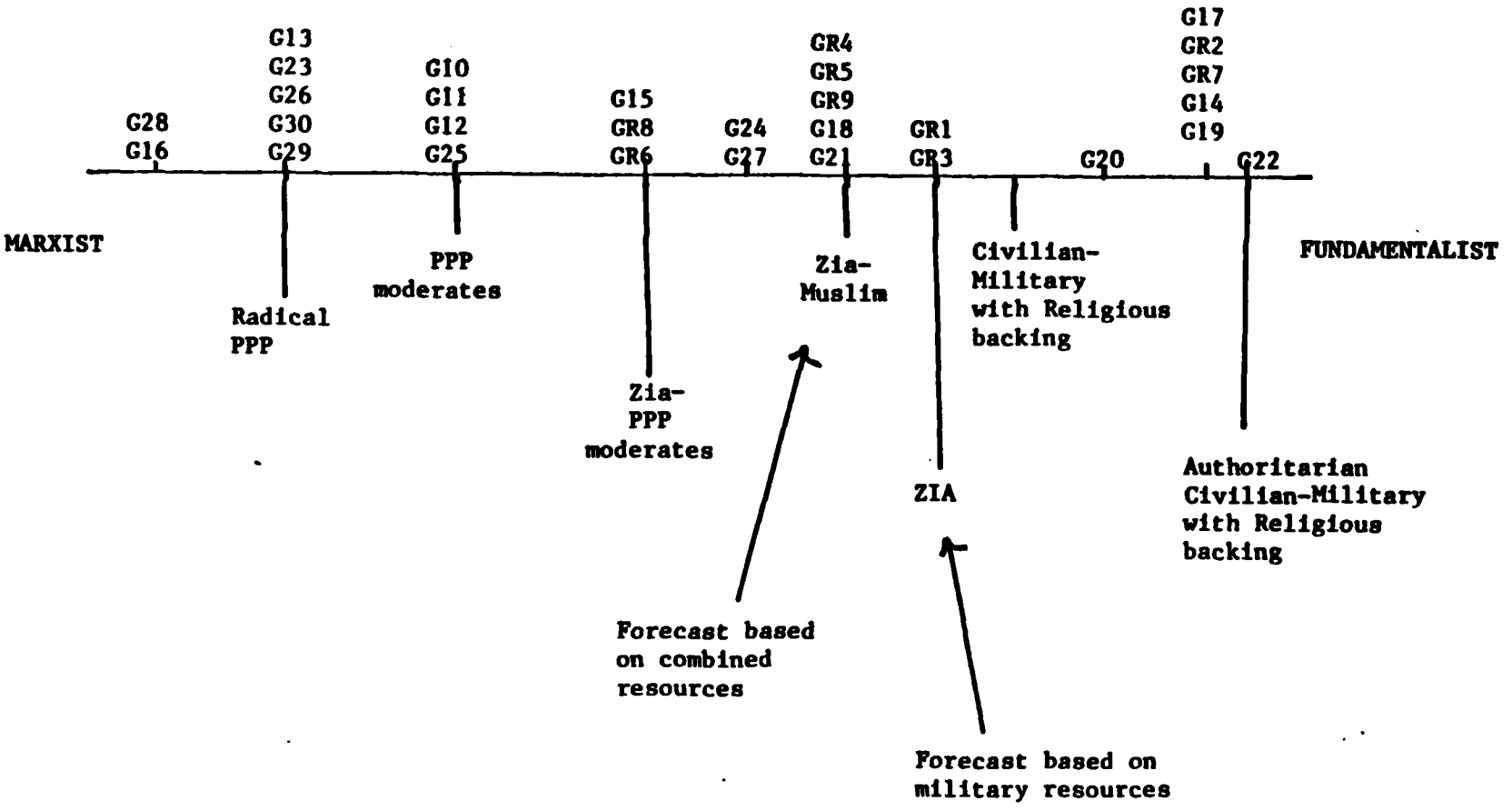
PAKISTAN

GROUPS AND CAPABILITIES

GROUPS	CAPABILITIES POL.	ECO.	MIL.	TOT.
Student-Islamic (G22)	55	20	25	100
Student-PSF (G23)	50	15	15	80
Student-Moderate (G24)	40	10	5	55
Professionals-secular (G25)	40	25	5	70
Soviet Union (G26)	35	30	5	70
United States (G27)	25	60	0	85
Baluchi Elite (G28)	15	10	15	40
Sindhi autonomists (G29)	25	20	10	55
Pushtun autonomists (G30)	20	15	5	40

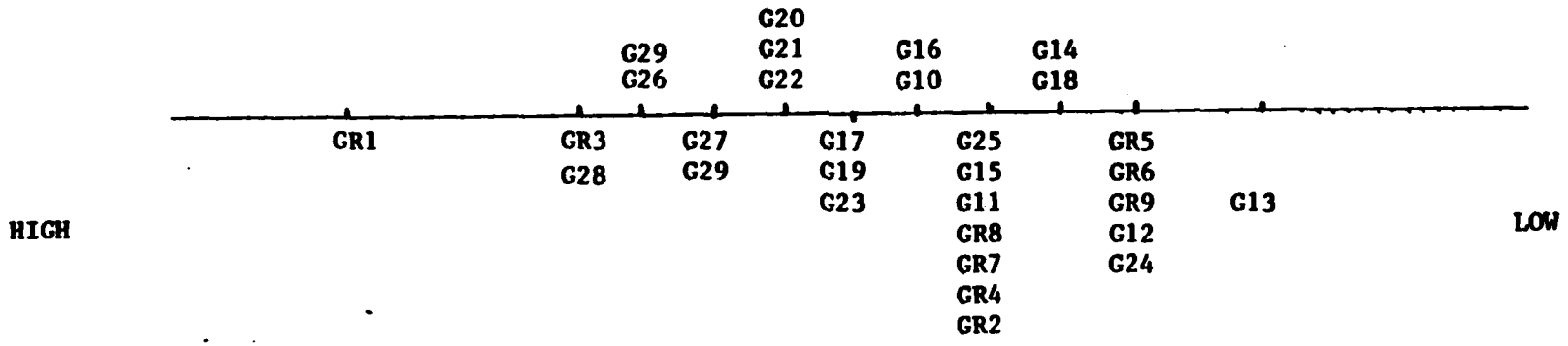
PAKISTAN

ISSUE POSITIONS



PAKISTAN

ISSUE SALIENCE



PAKISTAN

COALITION STRUCTURE

COALITION 1: GR1 - GR3

COALITION 2: GR2 - GR7 - G14 - G17 - G19 - G20 - G22

COALITION 3: GR4 - GR5 - GR9 - G18 - G21

COALITION 4: GR6 - GR8 - G15

COALITION 5: G10 - G11 - G12 - G25

COALITION 6: G13 - G23 - G26 - G29 - G30

COALITION 7: G16 - G28

COALITION 8: G24 - G27

PAKISTAN

RISK SCORES AND STABLE POLICY POSITION

COMBINED RESOURCES

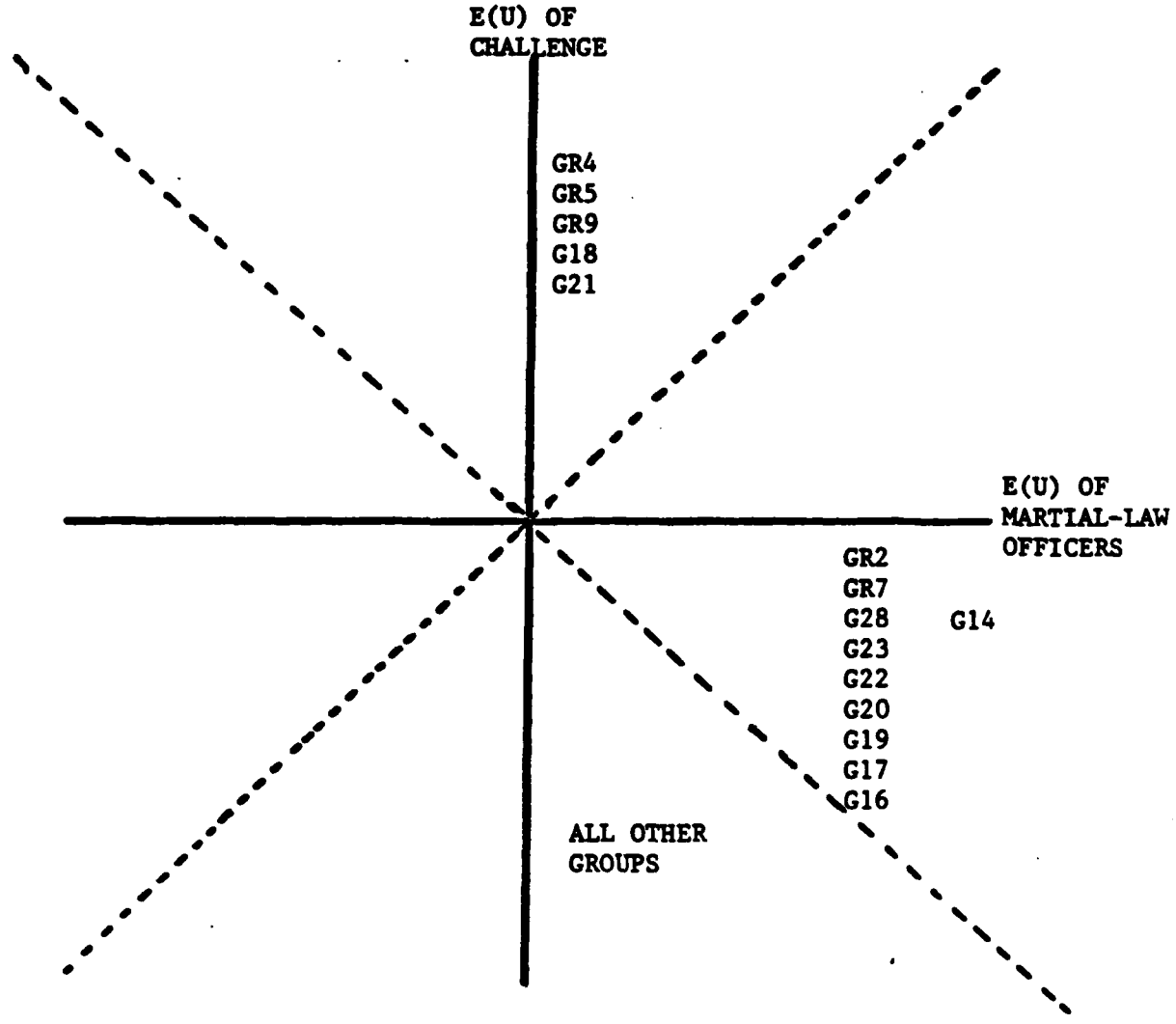
GROUP	RISK SCORE	MOST STABLE POLICY POSITION
GR1 (Martial-Law Officers)	-.90	GR4
GR2 (Pro-Islamic Army)	-.25	GR4
GR3 (Senior Civil Servants)	-.90	GR4
GR4 (Provincial Civil Servants)	-1.0	GR4
GR5 (Army Moderates)	-1.0	GR4
GR6 (Army Populists)	-.49	GR4
GR7 (Islamic Civil Service)	-.25	GR4
GR8 (Populist Civil Service)	-.47	GR4
GR9 (Landlords-Big A)	-1.0	GR4
G10 (Landlords-Big PPP)	.18	GR4
G11 (Middle Landlords)	.16	GR4
G12 (Landowning Peasants)	.09	GR4
G13 (Tenantry)	.53	GR4
G14 (Labor-Right)	-.25	GR4
G15 (Labor-Moderate)	-.45	GR4
G16 (Labor-Radical)	.76	GR4
G17 (Professionals-Islamic)	-.24	GR4
G18 (Industrialists)	-1.0	GR4
G19 (Clerics)	-.24	GR4
G20 (Business Bazaaris)	-.48	GR4
G21 (Middle Business)	-1.0	GR4
G22 (Student-Islamic)	-.17	GR4
G23 (Student-PSF)	.60	GR4
G24 (Student-Moderate)	-.88	GR4
G25 (Professional-secular)	.12	GR4
G26 (Soviet Union)	.61	GR4
G27 (United States)	-.84	GR4
G28 (Baluchi Elites)	.76	GR4
G29 (Sindhi autonomists)	.59	GR4
G30 (Pushtan autonomists)	.55	GR4

PAKISTAN

EXPECTED UTILITY ANALYSIS

FORECAST BASED ON RISK ORIENTATIONS

COMBINED RESOURCES



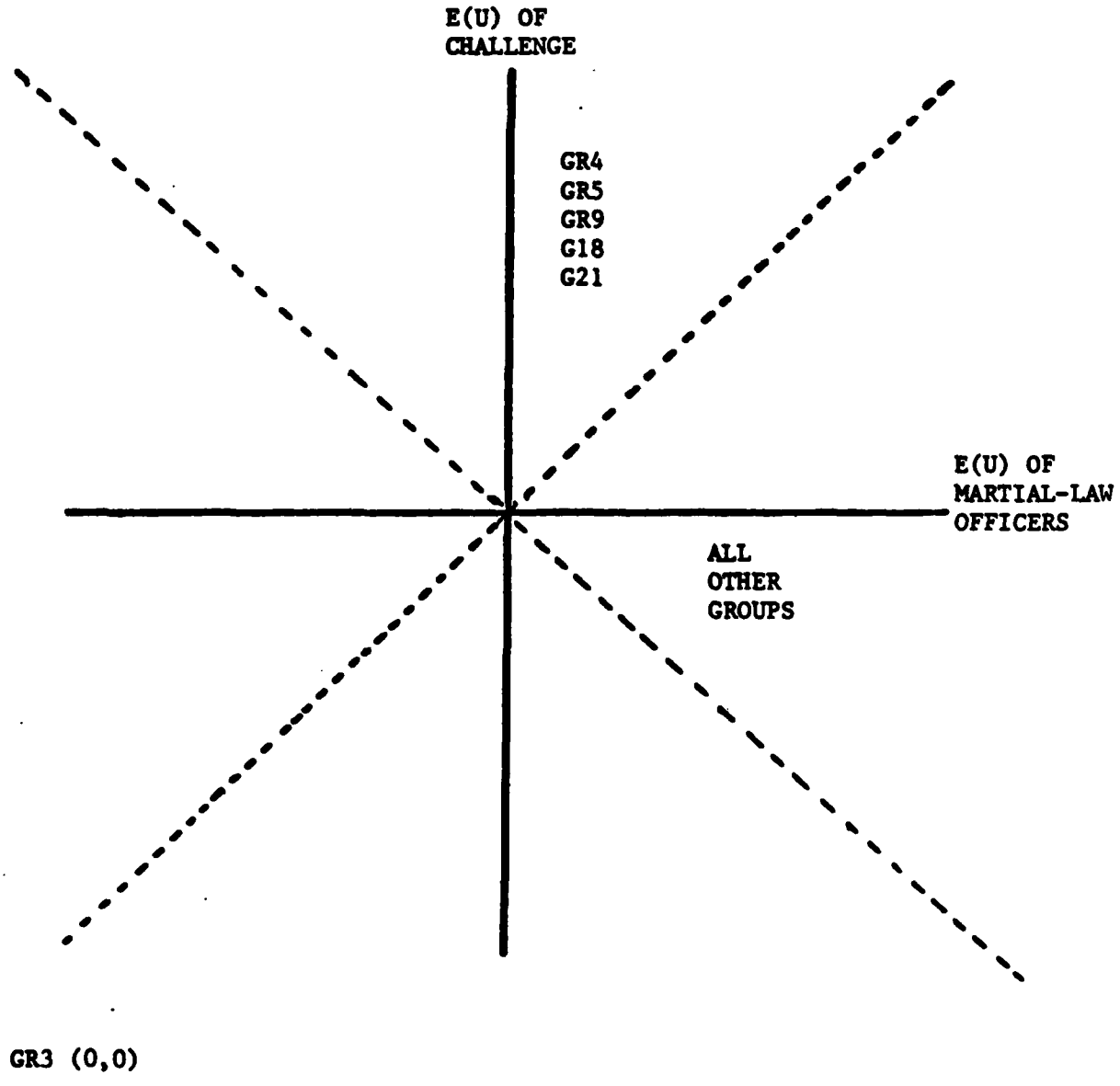
GR3 (0,0)

PAKISTAN

EXPECTED UTILITY ANALYSIS

FORECAST BASED ON "OBJECTIVE" VIEW

COMBINED RESOURCES



PAKISTAN

RISK SCORES AND STABLE POLICY POSITIONS
MILITARY RESOURCES

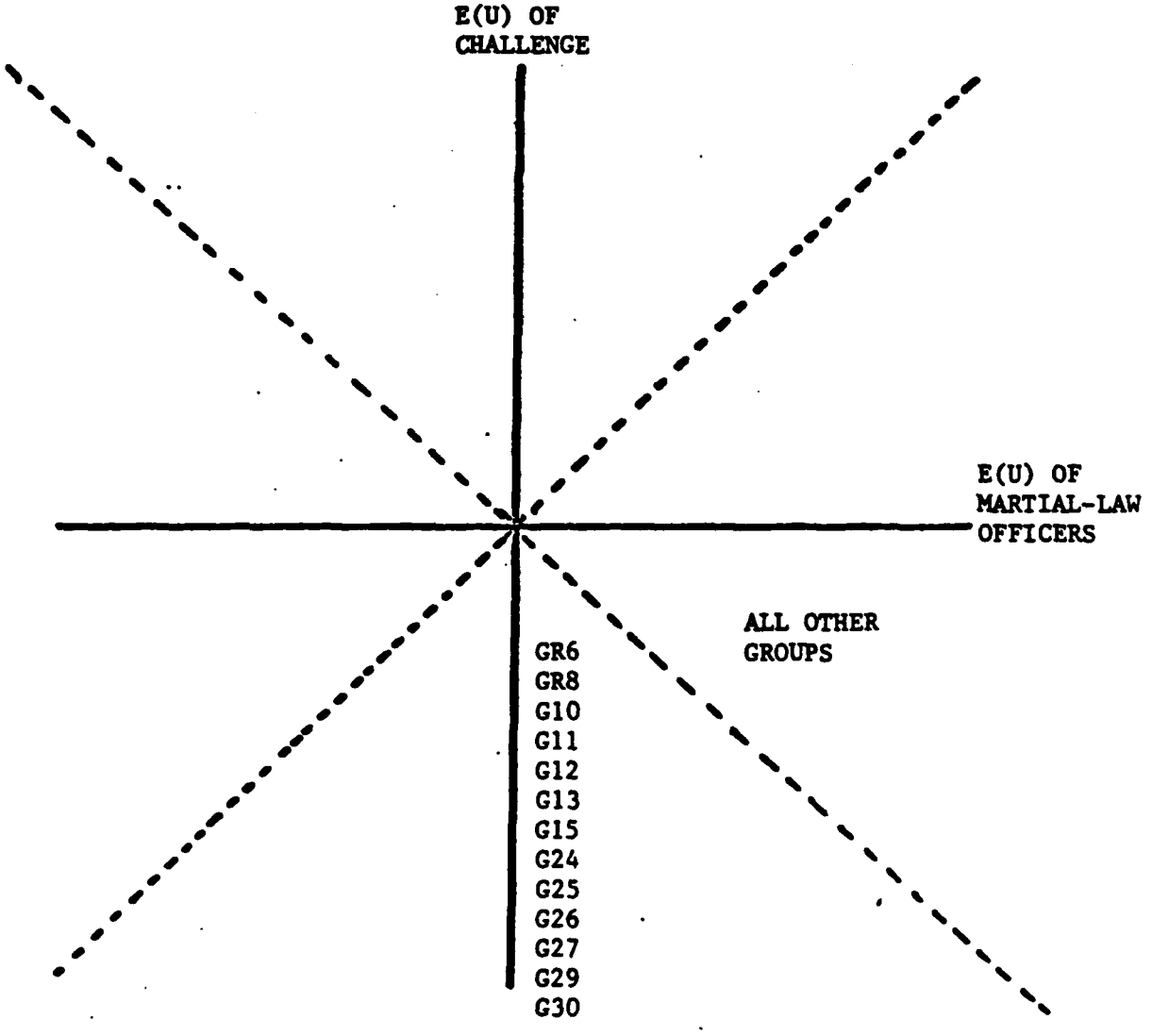
GROUP	RISK SCORE	MOST STABLE POLICY POSITION
GR1 (Martial-law officers)	-1.0	GR1
GR2 (Pro-Islamic Army)	-.37	GR4
GR3 (Senior Civil Servants)	-.97	GR4
GR4 (Provincial Civil Servants)	-1.0	GR4
GR5 (Army Moderates)	-.98	GR1
GR6 (Army Populists)	-.35	GR1
GR7 (Islamic Civil Service)	-.32	GR4
GR8 (Populist Civil Service)	-.45	GR4
GR9 (Landlords-Big A)	-1.0	GR4
G10 (Landlords-Big PPP)	.16	GR4
G11 (Middle landlords)	.11	GR4
G12 (Landowning Peasants)	.02	GR4
G13 (Tenantry)	.46	GR4
G14 (Labor-Right)	-.36	GR4
G15 (Labor-Moderate)	-.39	GR4
G16 (Labor-Radical)	.77	GR1
G17 (Professionals-Islamic)	-.31	GR4
G18 (Industrialists)	-1.0	GR4
G19 (Clerics)	-.36	GR4
G20 (Business Bazaaris)	-.59	GR4
G21 (Middle Business)	-1.0	GR1
G22 (Student-Islamic)	-.29	GR4
G23 (Student-PSF)	.63	GR1
G24 (Student-Moderate)	-.83	GR4
G25 (Professionals-secular)	.14	GR4
G26 (Soviet Union)	.57	GR4
G27 (United States)	-.88	GR4
G28 (Baluchi Elites)	.80	GR1
G29 (Sindh autonomists)	.62	GR1
G30 (Pushtan autonomists)	.54	GR4

PAKISTAN

EXPECTED UTILITY ANALYSIS

FORECAST BASED ON RISK ORIENTATIONS

MILITARY RESOURCES

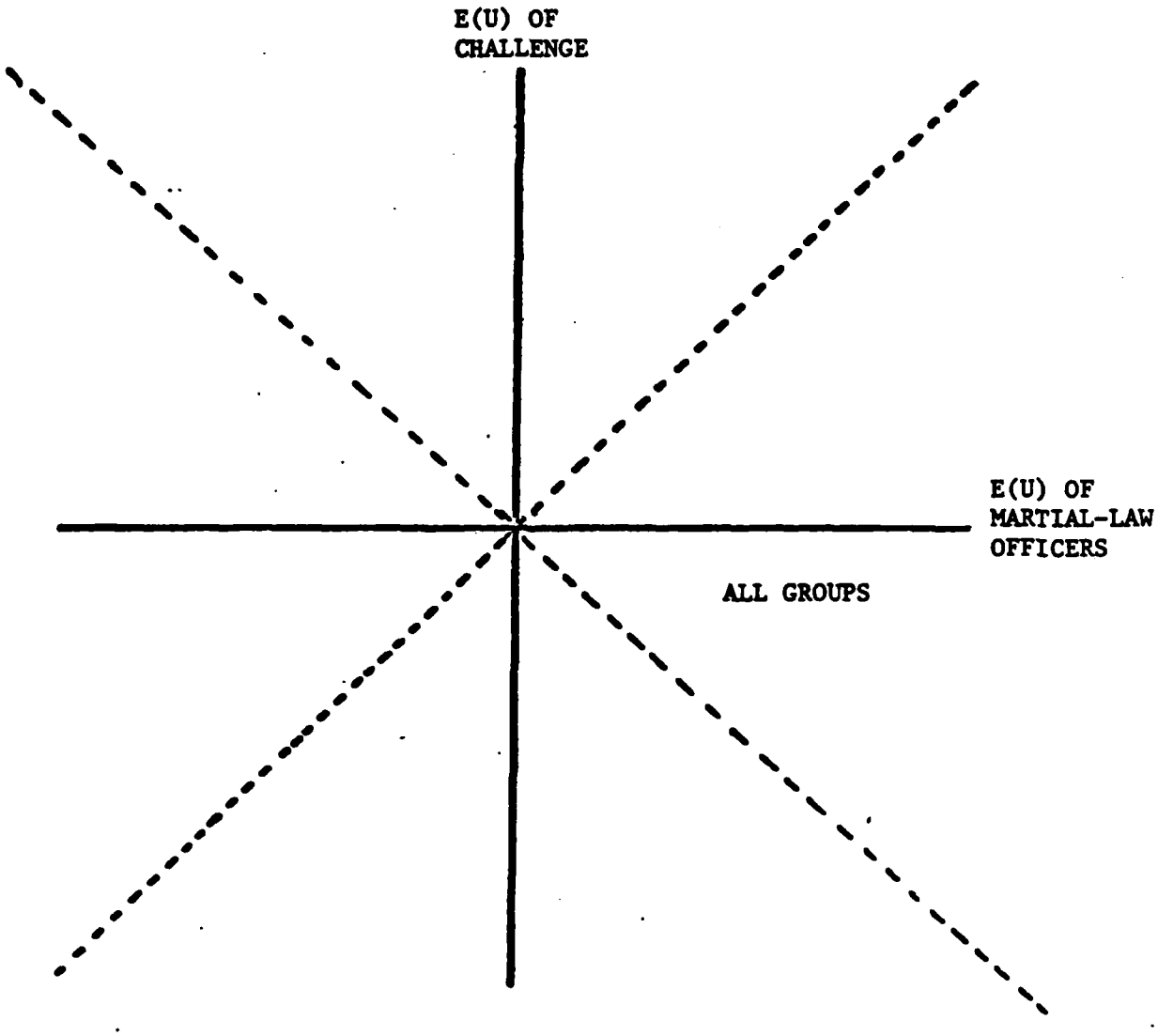


PAKISTAN

EXPECTED UTILITY ANALYSIS

FORECAST BASED ON "OBJECTIVE" VIEW

MILITARY RESOURCES



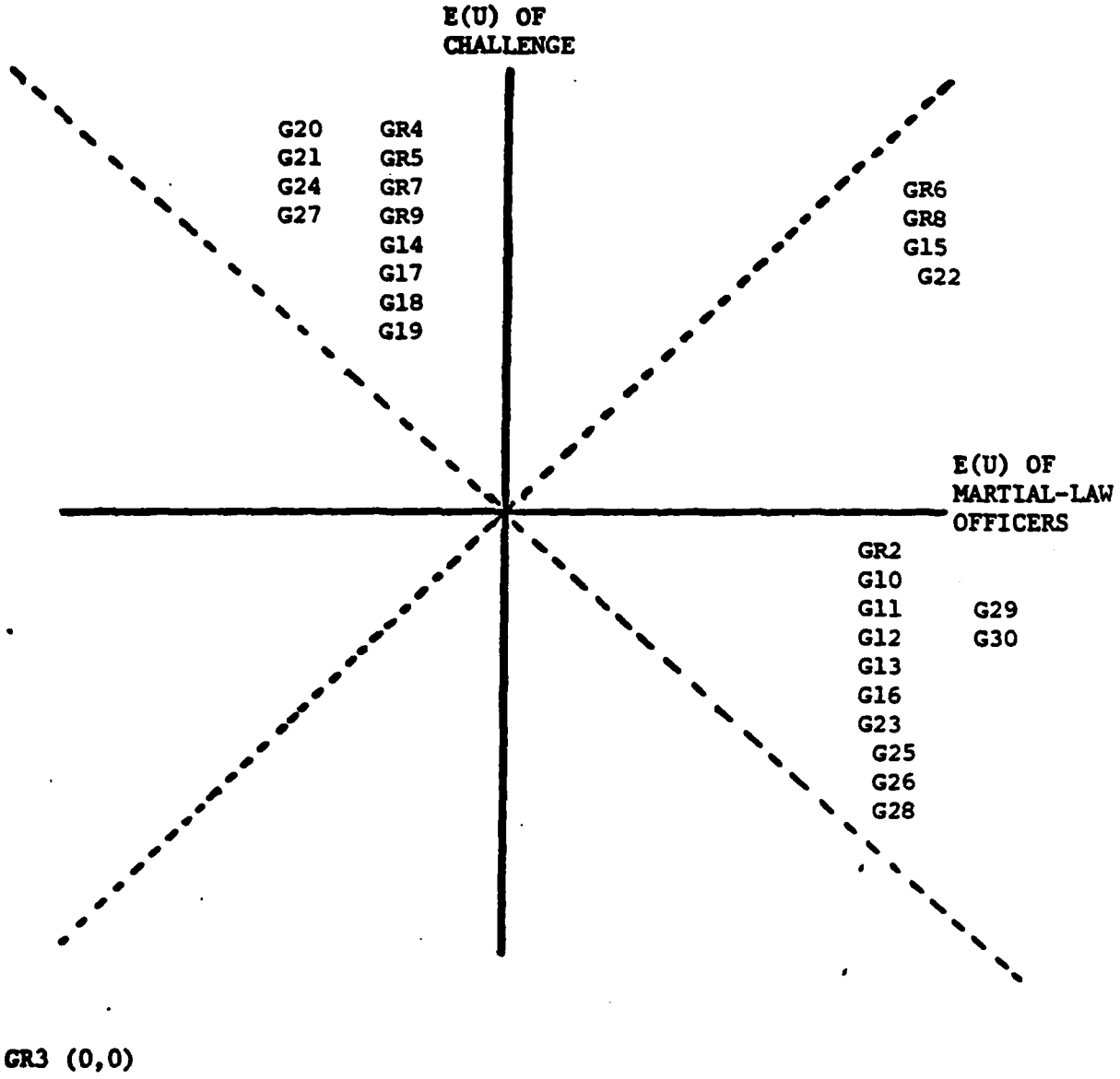
PAKISTAN

EXPECTED UTILITY ANALYSIS

FORECAST BASED ON "OBJECTIVE" VIEW

COMBINED RESOURCES

ISSUE POSITIONS FOLDED OVER



Nov. 19, 198

MEXICO

EXECUTIVE SUMMARY

The revised analysis of food, fuel, and wage policy in Mexico indicates slightly greater increases in the prices of fuel and food and a somewhat smaller decline in real wages than previously forecast. This change in the forecast is primarily a function of including the incumbent and future presidents as distinct groups. Both generally prefer policies which call for increases in prices and lower wages and the president-elect consistently favors a more austere set of policies than the current president.

The forecast on wage policy is for a 45 percent increase in wages (assuming a 50 percent inflation rate) or a small decline in real terms. The dominant coalition on this issue consists of the military, the middle or popular class, and the incumbent president. These three groups are in the position to successfully challenge the policy preferences of the president-elect and produce an outcome in excess of that preferred by the president-elect.

On the issues of food and fuel prices, the forecast is for a 50 percent increase in prices. This increase pegs prices to the inflation rate, however, real prices would rise given our forecast of a real decline in wages. Again, the president-elect has adopted policy positions which would prove to be very conflictual if he sought to implement them. There is a strong coalition on these two issues composed of the military, the middle class, the incumbent president, and PAN all of whom prefer less austere policies.

At the time the data were collected for these analyses, there was a general belief that the capabilities of the president-elect were increasing and those of the incumbent were declining. Given the pressure on the president-elect to moderate his policies, it would be very useful to follow up this analysis with one based on 6 month and 1 year estimates of capabilities to see whether the president-elect will be able to implement his policies.

MEXICO

GROUPS AND CAPABILITIES

GROUPS	CAPABILITIES		
	POL.	ECO.	MIL.
Pro PRI Organized Labor (OLB)	70	90	40
Unorganized Labor (ULB)	10	20	20
Non-PRI Independent Labor (ILB)	30	40	20
Business (BUS)	60	90	30
PRI-Agrarian (AGR)	20	20	20
PRI-Military (MIL)	40	30	100
PRI-Popular Class (MID)	50	70	30
Opposition Left (PSUM) (LEF)	20	20	20
Opposition Right (PAN) RIG)	40	50	20
International Bankers (BAN)	20	90	0
Foreign Business (FBS)	10	50	5
Peasants (PEA)	0	10	10
PEMEX (PEM)	20	50	20
Incumbent President (INP)	100	90	200
President Elect (PEL)	90	90	100

MEXICO

COALITION STRUCTURE

ISSUE: Nominal wage policy (total of both supplemental and January increases).

Coalition 1: OLB - ULB - AGR

Coalition 2: BUS - FBS - RIG - BAN - PEL

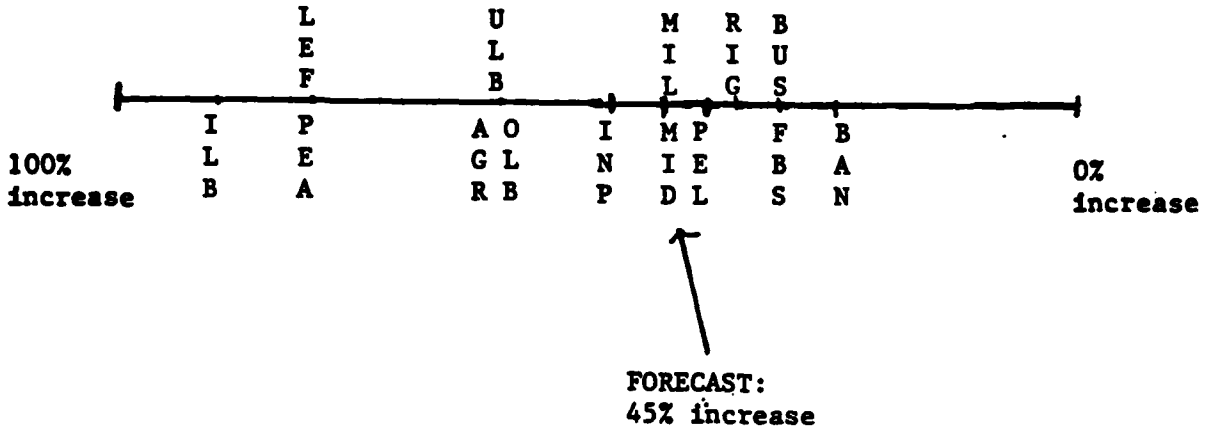
Coalition 3: MIL - MID - INP

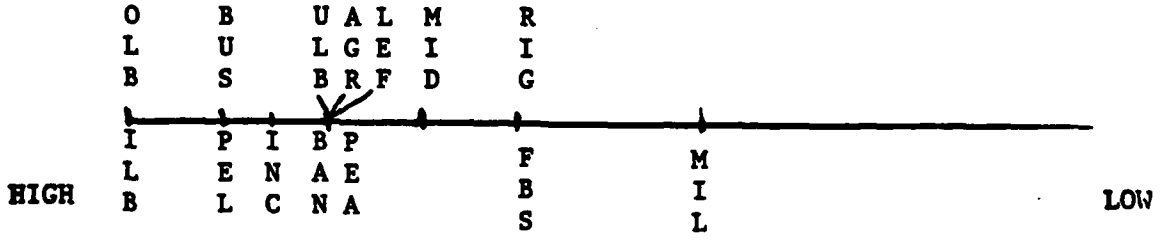
Coalition 4: LEF - PEA - ILB

MEXICO

ISSUE POSITIONS AND SALIENCE

ISSUE: Nominal wage policy (total of both supplemental and January increase).





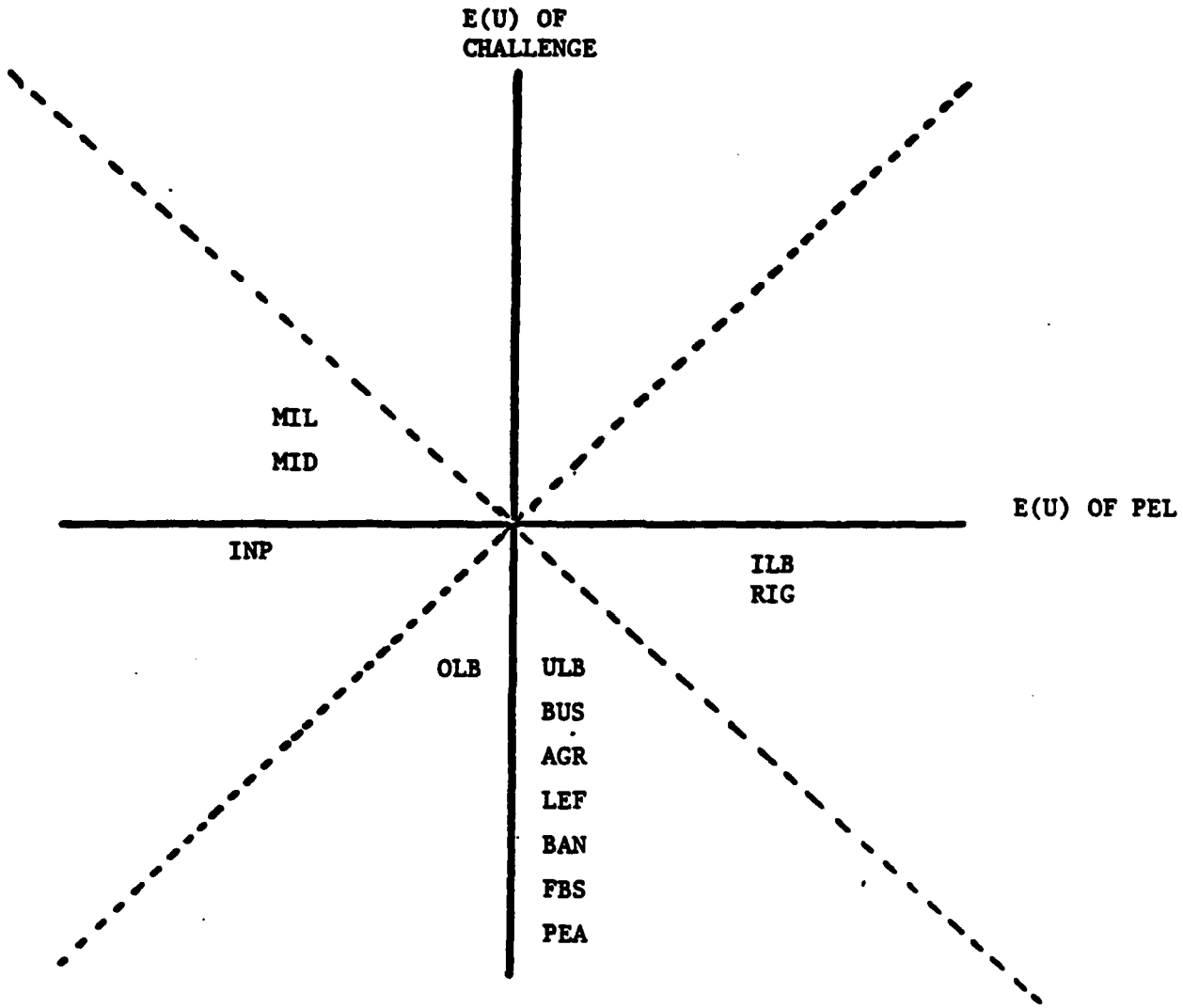
MEXICO

EXPECTED UTILITY ANALYSIS

FORECAST BASED ON RISK ORIENTATIONS

POLITICAL-ECONOMIC RESOURCES

WAGE POLICY



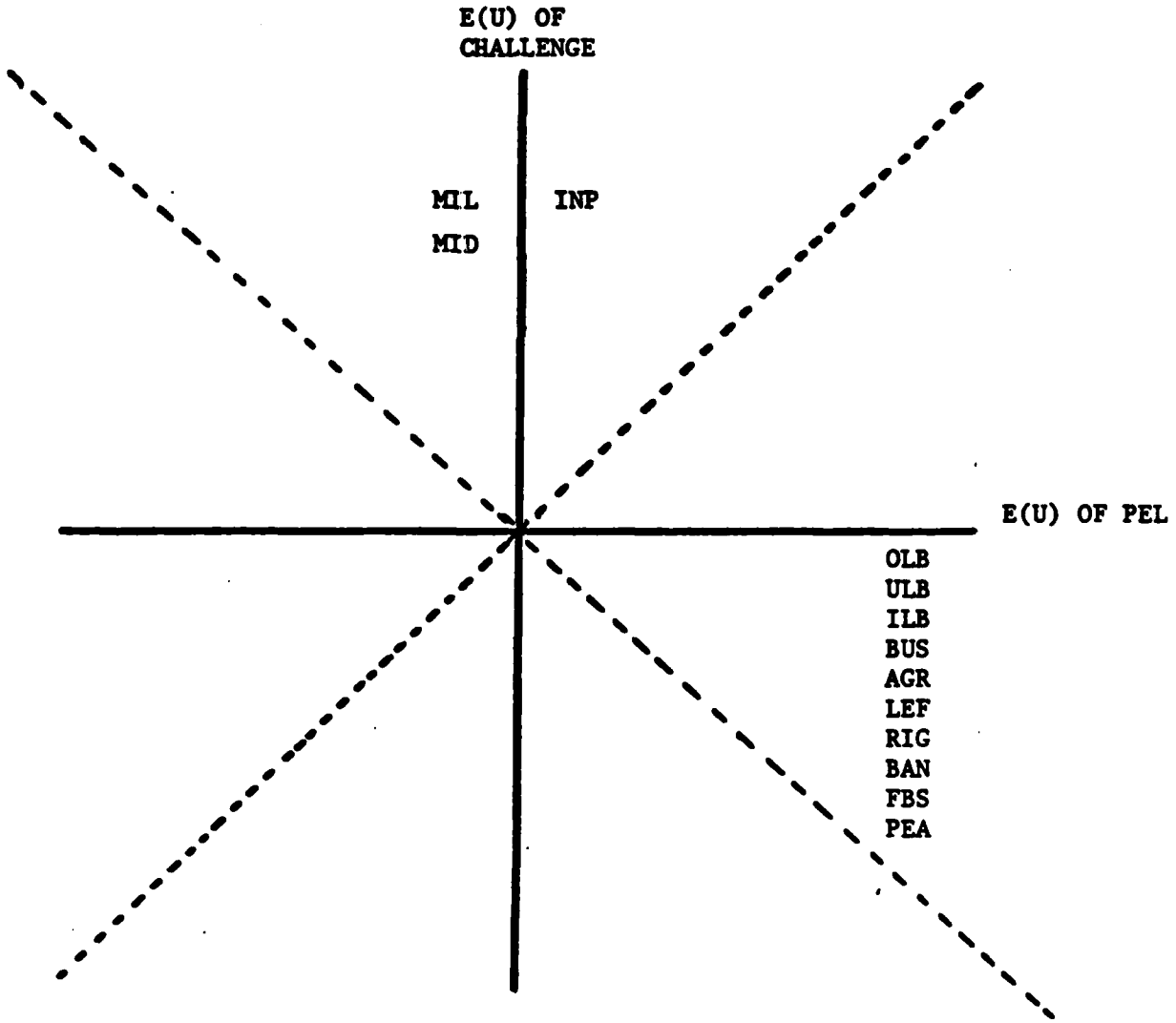
MEXICO

EXPECTED UTILITY ANALYSIS

FORECAST BASED ON "OBJECTIVE" VIEW

POLITICAL-ECONOMIC RESOURCES

WAGE POLICY



MEXICO

COALITION STRUCTURE

ISSUE: Food Prices--annual increase in retail prices assuming 50% inflation.

Coalition 1: OLB - ILB - PEA

Coalition 2: ULB - LEF

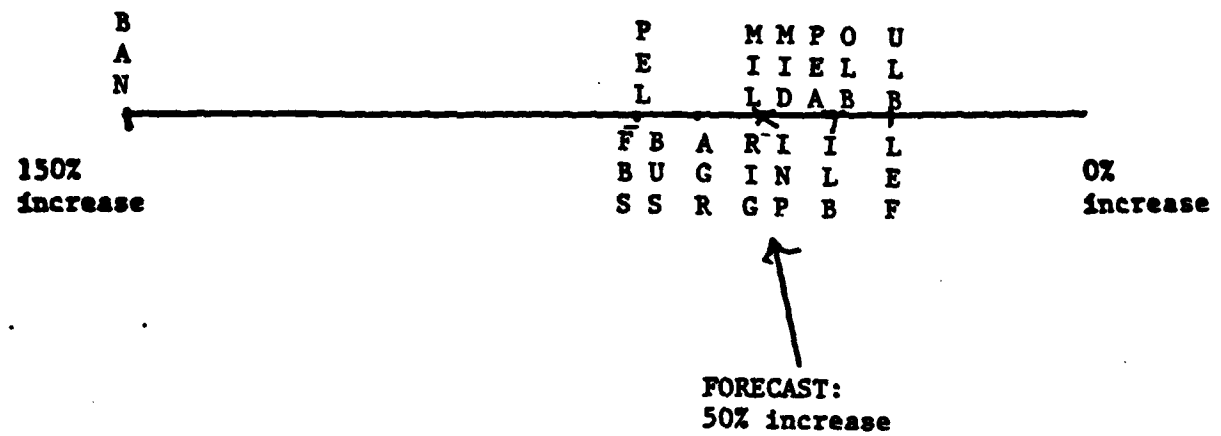
Coalition 3: BUS - FBS - AGR - BAN - PEL

Coalition 4: MIL - MID - RIG - INP

MEXICO

ISSUE POSITIONS AND SALIENCE

ISSUE: Food subsidies—annual increase in retail prices assuming 50% inflation.



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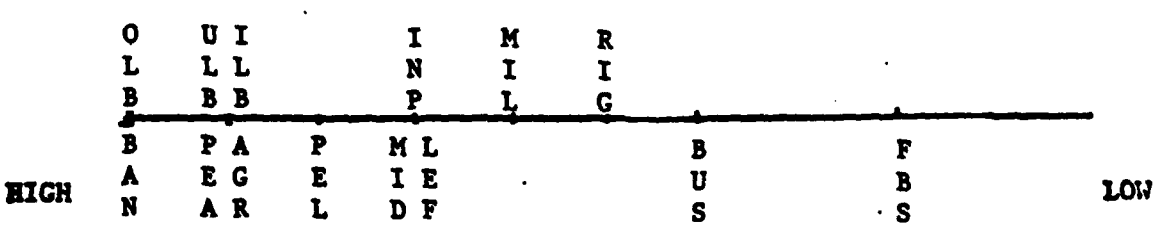


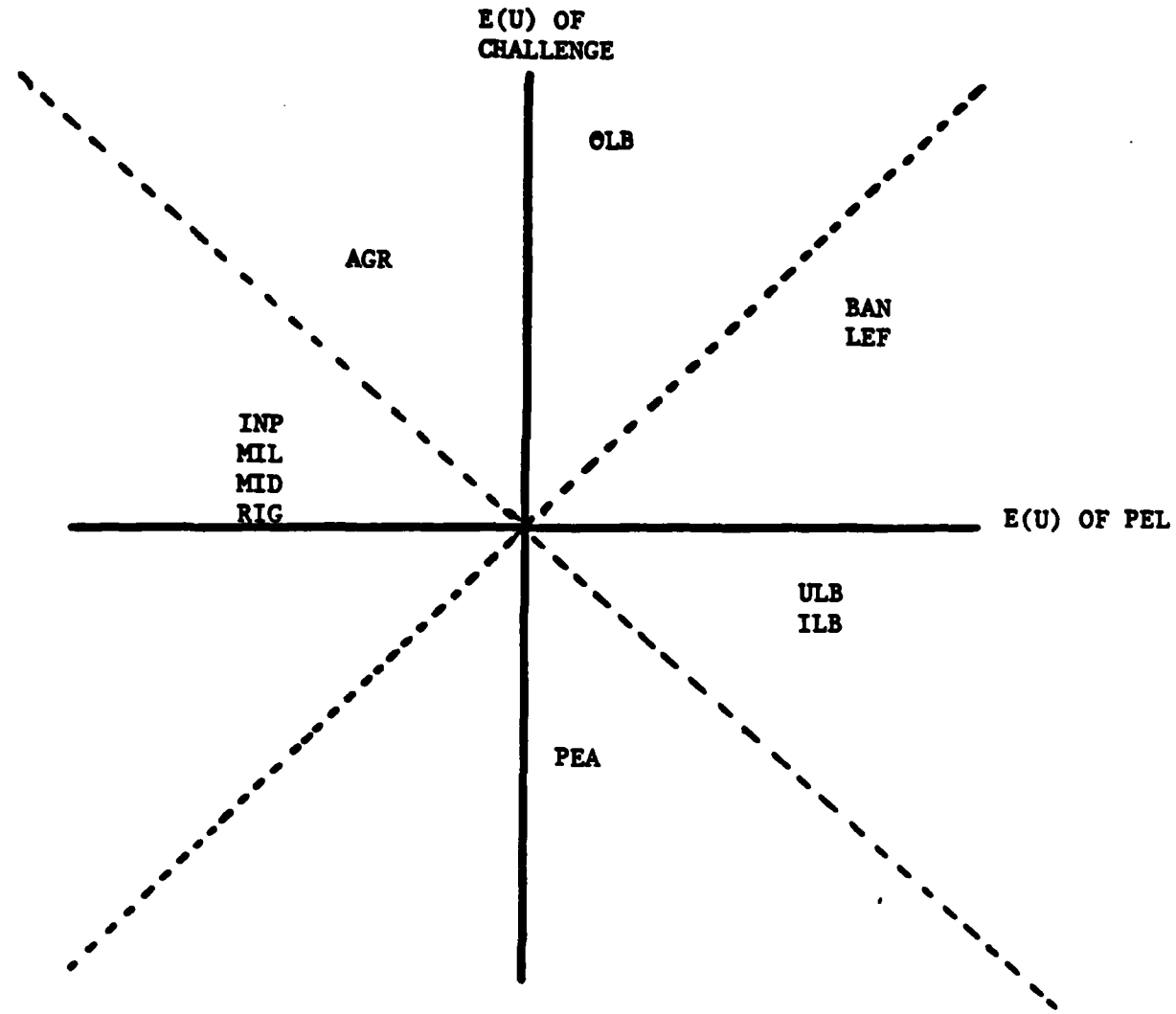
MEXICO

EXPECTED UTILITY ANALYSIS

FORECAST BASED ON RISK ORIENTATION

POLITICAL-ECONOMIC RESOURCES

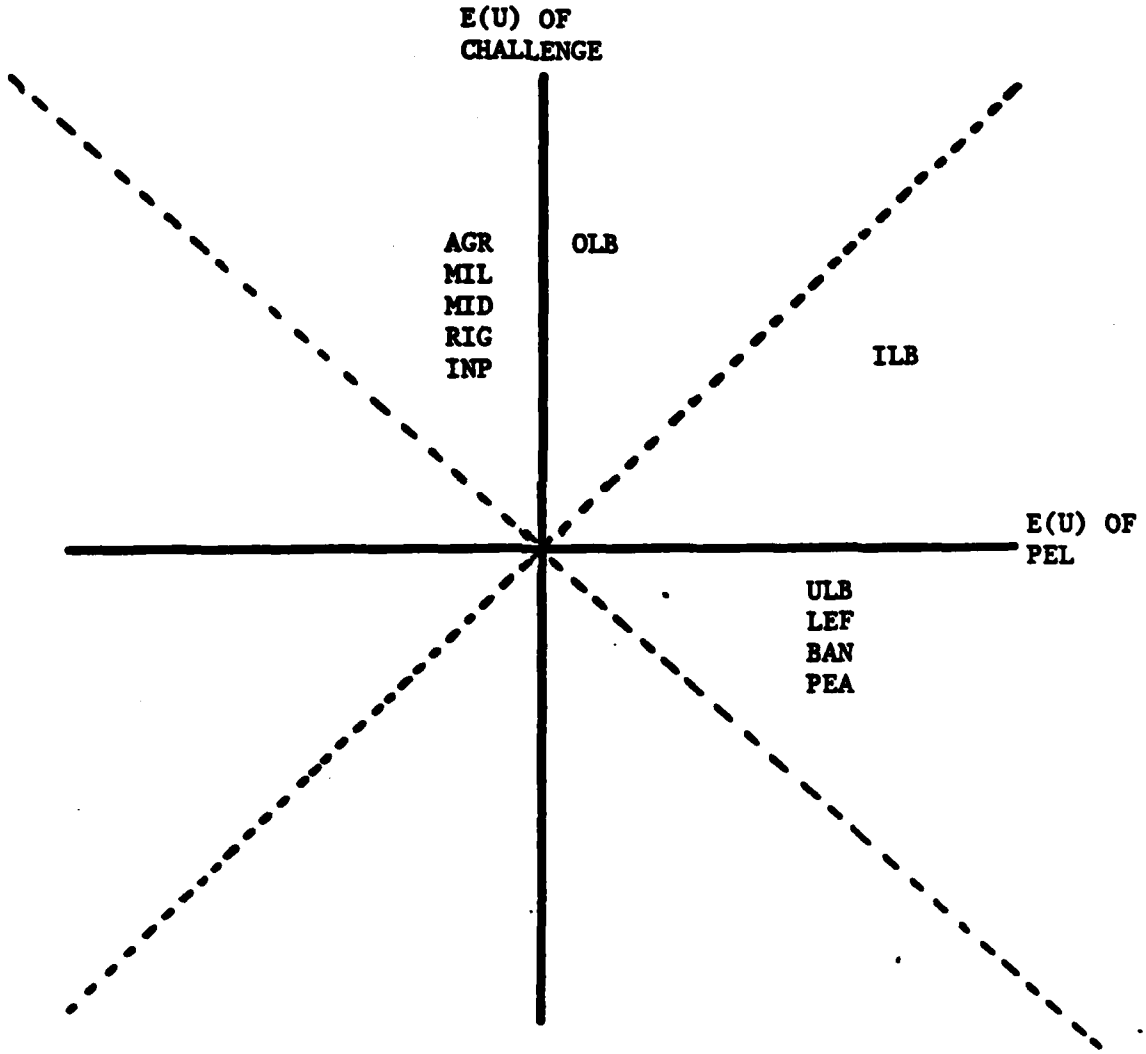
FOOD PRICES



BUS (0,0)
FBS (0,0)

MEXICO
EXPECTED UTILITY ANALYSIS
FORECAST BASED ON "OBJECTIVE VIEW
POLITICAL-ECONOMIC RESOURCES

FOOD PRICES



FBS (0,0)
BUS (0,0)

MEXICO

COALITION STRUCTURE

ISSUE: Fuel Subsidies--annual increase in retail prices assuming 50% inflation.

COALITION 1: OLB - AGR

COALITION 2: ULB - ILB - LEF - FBS - PEA

COALITION 3: BUS - MID - MIL

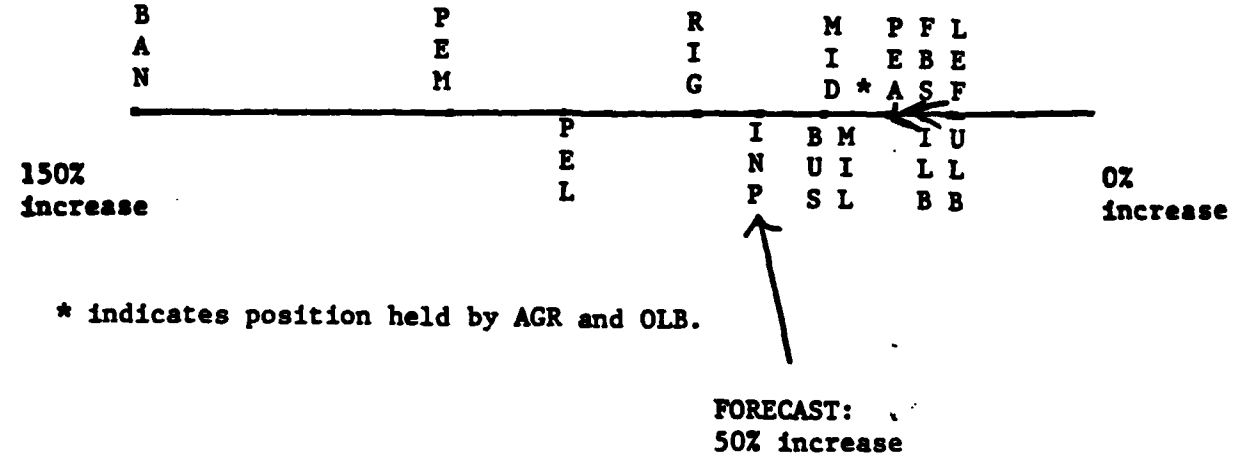
COALITION 4: BAN - PEM - PEL

COALITION 5: RIG - INP

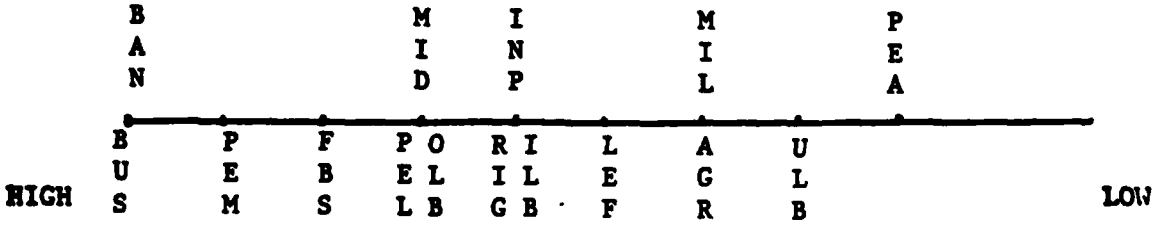
MEXICO

ISSUE POSITIONS AND SALIENCE

ISSUE: Fuel Subsidies—annual increase in retail prices assuming 50% inflation.



* indicates position held by AGR and OLB.



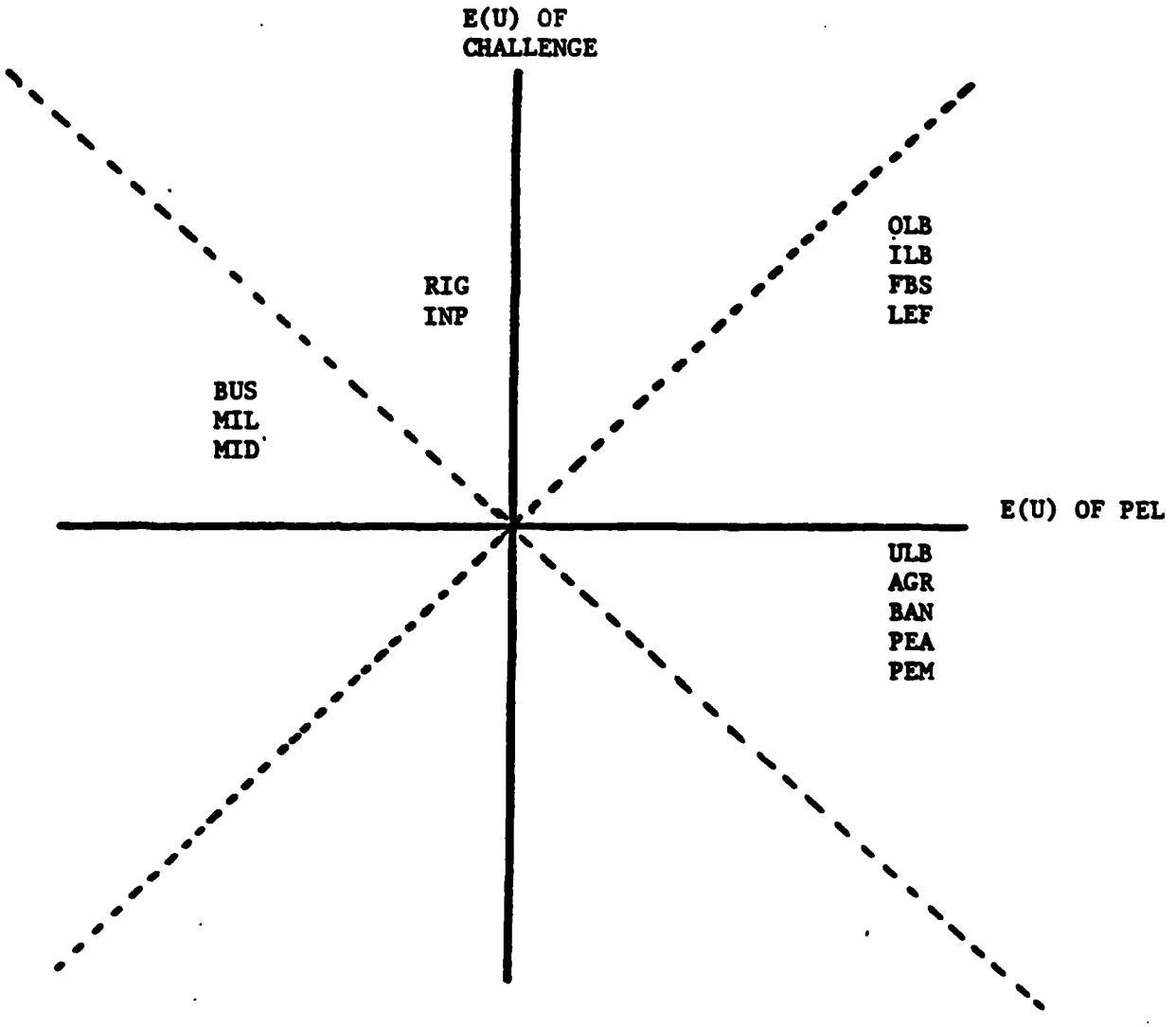
MEXICO

EXPECTED UTILITY ANALYSIS

FORECAST BASED ON RISK ORIENTATION

POLITICAL-ECONOMIC RESOURCES

FUEL PRICES



MEXICO

EXPECTED UTILITY ANALYSIS

FORECAST BASED ON "OBJECTIVE" VIEW

POLITICAL-ECONOMIC RESOURCES

FUEL PRICES